

***The costs and benefits of 'The New World of Work'***



***A model based on the cost and benefits regarding  
'The New World of Work'***

## Master Thesis

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## Preface

This Master thesis is the last assignment that belongs to the Master Business Administration, specialization Human Resource Management. The research is conducted by Achmea, division Pension & Life. During a period of six month I was part of the team P&O.

The subject of this thesis is *The New World of Work*, which is an actual and interesting topic. The internship was an instructive and enjoyable time. I have conducted my activities with pleasure and I would like to thank all the colleagues who have contributed to my thesis.

The preface is always a good moment to thank some persons in particular. First of all, I would like to thank the supervisor of Achmea; Willem Bruining. Thank you for feedback, your expertise and your confidence in me.

In addition to the supervisor of Achmea, two supervisors of the University of Twente were closely involved in this research. Jan de Leede and Henk Kroon have accompanied me during the internship. I would like to thank them for their feedback, dedication and the pleasant cooperation.

Apeldoorn, December 2012

Jorien Kraijenbrink

## Management summary

This research can be considered as a business case, and focuses on two sides; 1) on the one hand the *hard side* of 'The New World of Work (abbreviation NWW) was researched. The costs of the virtual and physical dimension provide interpretation on the *hard side*. The mental dimension involves the *soft side* of the NWW. The *soft side* is aimed at the effects of NWW on the components *trust*, *social cohesion* and *result-oriented leadership*. The above-mentioned sides of NWW are treated separately in the research. The central question of this research is the following; '*which influences do the mental, virtual and physical dimensions have on the cost and benefit analysis based on the New World of Work for the Pension & Life division of Achmea?*'

During this research the NWW was subdivided into three components; 1) flexibility, 2) virtual teams and 3) working at home. The literature study extensively discusses what kinds of benefits are significantly measured after implementing the three mentioned components. These benefits can be roughly divided into two types of benefits (Baane et al., 2010). On the one hand, benefits which can be realized in the short term, which is called *denominator management*. On the other hand benefits that can be realized in the long term, *numerator management*. Denominator management is aimed at cost-reduction. The associated components are a decrease of absenteeism, a higher productivity and of course cost-reduction itself. Baane et al., (2010) also regarded savings on travel costs and savings on housing costs as components of denominator management. Numerator management can be linked to job satisfaction, job performance, job motivation, productivity, work-life balance, and personal-family success.

In addition to the benefits of NWW, the literature study also discusses the operationalization of the virtual, physical and mental dimensions. To start with the *hard side* of NWW; the physical dimension is operationalized in 1) ergonomical design, 2) renting and furnishing external working areas, 3) renovation costs and 4) implementation costs of advisors. In the elaboration of this dimension, the current costs were compared with a situation where NWW has been fully implemented. The highest saving regarding this dimension can be realized in the cost centre *ergonomical design*. The assumption of 0,7 fte per work desk was made here. When this number is taken into account, a saving of € 155.860,- per month can be realized.

The virtual dimension was operationalized in 1) digitalizing, 2) system and process optimization, and 3) advanced ICT facilities. The basis of this calculation is based on three types of employees; knowledge, production, and mobile workers. The needed facilities were inventoried and formed that basis of the calculation. To enable an employee to work time- and place independent, an investment of €100,- is needed per month.

To take both dimensions into consideration, the Pension & Life division could save € 150,- per employee per month when NWW is fully implemented.

The robustness of the costs is large; a number of assumptions had to be made in order to come to a cost calculation. Therefore caution is required with interpretation of these results.

The mental dimension was operationalized with the components; trust, social cohesion and result-oriented leadership. These components were measured with the use of quantitative research. A questionnaire was distributed to all the employees of the Pension & Life division (1129). The response rate was 49,2% which amounts to 555 employees. The aim of this questionnaire was to get insight into the components of the mental dimension and the components of NWW. Therefore this research can be regarded as diagnostic.

Statistical analyses have proved that NWW provides benefits for the Pension & Life division. The results were controlled for the different locations in which the division is distributed. The regression indicated that the Tilburg, Leeuwarden and Apeldoorn PWA locations showed significant results. The Apeldoorn CBM location did

not show a significant result. In addition to the control variable location, another control variable was added; type of employee. The regression test with the inclusion of the type of employee was also significant.

The first moderating variable that was tested was result-oriented leadership. The more the manager manages on result, the better the performance. However, this relationship is not significant. The second moderator variable was social cohesion. The more employees experience social cohesion, the better the performance. However, this relationship is not significant. The last moderator variable was trust, which showed a positive regression and a significant relationship with the dependent variable *performance*.

These regressions were also tested for both control variables. The control variables *location* showed significant results. The level of trust in management is significantly higher at the Tilburg location than at the Leeuwarden location. The control variable *type of employee* did not show significant results.

An important question is; are there still benefits for the Pension & Life division when the mental dimension needs investments? Yes, is the answer because a lot of knowledge regarding NWW is already available. The Tilburg location has documentation and workshops available that can be unrolled at the other locations. The consultancy company Veldoen has also provided advice at some of the locations; therefore a lot of resources and workshops are available. The project group (see point 3, Recommendations) is inter alia responsible for this part. It only brings costs in the case of time.

The researcher recommends the following to the management of the Pension & Life division:

- 1) Innovation starts at the top, an important role is reserved for the management of the Pension & Life division. Management must act as the *driving force* behind this innovation.
- 2) After the management, when the more general principles of NWW are being formulated, the middle management comes into the picture. Middle management takes care of the facilities that employees need to work time and place independent. Management is responsible for the policies regarding the facilities, and middle management needs to arrange this with the employees. In addition, middle management needs to carry out *exemplary behaviour*.
- 3) Management and middle-management need to be supported by a project group, which already exists in the division. The project group consists of employees who represent a dimension.

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## 1. Introduction

At this moment a lot of organizations work according to 'traditional organization principles', which are based on hierarchical and bureaucratically principles. This traditional work form has proved to be effective in specific organizational contexts. The traditional form emerged after the industrial revolution and has proved its success in the Netherlands but also worldwide (Baane et al., 2010). However, nowadays there is the question whether this form still fits for most organizations.

### 1.1 Traditional organization versus the new organization

Due to economic and social changes new organizational forms have occurred. In the literature these forms are referred to as virtual organizations, atomized organizations, boundary-less organizations or high-performance organizations (Child & McGrath, 2001). These changes have ensured that components, for example the structure of the organizational borders, leadership and regulations change. Some examples are given in table 1;

	Traditional organization	New organization
Goal formulation	Top-down	Decentralized
Power	Concentrated on one place	Diffused over the organization
Leadership	Command and control	Give direction
Structure	Formal hierarchy	Teams and project groups
Borders	Clearly indicated	Permeable and fuzzy
Regulation	Vertical	Horizontal

Table 1: Towards the new reality? (Child and McGrath, 2001)

However, this does not imply that all organizations have to change their work form. Partly, the old organizational form fits, because over the course of a few years physical labour is still needed. The core will remain and a few adaptations will be made due to developments. However, for a majority of the organizations, more is needed than optimizing the current business model (Baane et al., 2010). According to Bijl (2007) organizations are going to work in a way whereby the human being is the central point instead of the production process. Bijl (2007) has explained *The New Way of Working*<sup>1</sup> (abbreviation NWW) as a manner whereby the highly educated knowledge worker is in optimal balance. Innovation and creativity have optimal opportunities to develop. The advantages of this new concept are for example better welfare, productivity improvement and a better balance between work and private life (Baane et al., 2010).

Working at home is a small part of the NWW (see chapter 2). Research from the Central Office of Statistics<sup>2</sup> has proved that the number of employees who work according to this concept was 27% of all employees in 2010 and this figure is based on a national level. The sector in which this occurs most frequently is education, while in the agriculture sector and fisheries this is less frequent (CBS, 2011). In 2005 the percentage was 25%. Moreover, the amount of hours in which an employee works at home is also increasing, in 2010 the approximate hours was 6,2 and in 2005 approximately 5,5 hours.

Achmea is a company which operates in the financial services sector. According to CBS (2010) the financial services sector is in second place regarding the before-mentioned ranking.

<sup>1</sup> 'Het Nieuwe Werken' is a Dutch designation and can be translated in two different ways; 'The New World of Work' or 'The New Way of Working'. Microsoft was the first organization who introduced this concept in the Netherlands and they translated it into 'The New World of Work. Therefore that designation is leading during this thesis.

<sup>2</sup> The Central Office of Statistics is a translation of the Dutch designation *Centraal Bureau voor de Statistiek*.

## 1.2 Achmea background

'The New World of Work' is an important concept within the HRM area which cannot be denied by organizations. Some organizations have already implemented the concept in a successful way and some organizations are on the verge of implementing it.

Achmea fits more or less in the last category, while taking a few cautious steps. The topic of NWW entails a lot of discussion; a lot of internal factors play a role and makes it a sensitive topic. The discussion is difficult and is predominantly based on the objective of NWW for Achmea; why should we work according to NWW? What is our aim, do we want to be an attractive employer for the external world? Or do our customers profit from this new work concept? In addition, this year is focused on cost consciousness, so the most important question is, which resources will be invested in and which resources not?

The Board of Directors only gave the intention of the concept as being the customer. The customer should not recognize any inconvenience when implementing NWW. The Board of Directors explained the intention with the use of the value profit chain. The value profit chain consists of three values; customer, employee and financial value. As mentioned before, the primary intention of NWW is the customer. The value profit chain can be regarded as a vicious circle; the added value for the customer flows to the employee and in the end to the financial value. All three groups of the value profit chain will benefit from NWW.

However, it cannot be ignored that the new work form has already been inserted in the organization. The Achmea organization consists of eleven divisions, see appendix 8.1. The Board of Directors has decided to unroll the NWW organically, so the divisions have the freedom to decide the pace at which to implement NWW. This has resulted in the fact that some divisions are already working according to NWW and some divisions are on the verge.

The Pension & Life division took a few steps with regard to implementing NWW. One important remark has to be placed here; the Pension & Life division consists of four locations; Apeldoorn, Amsterdam, Leeuwarden and Tilburg. The location Tilburg is of origin *Interpolis* and one of the pioneers on NWW. Therefore, this location has already adapted to the philosophy of NWW. The other locations (original Achmea locations) are lagging behind compared to Tilburg.

The Pension & Life division wants to have a business case in which the most important questions for the division are; what are the costs for implementing NWW? And what are the possible benefits which arise after implementing NWW? The first question discusses the *hard side* of the NWW and the second question discusses the *soft side* of NWW.

## 1.3 Problem statement

The principal of this research is Achmea, and to be more specific; the Pension & Life division. The subject of this thesis 'The New World of Work' is very broad. The new work concept has implications for the work environment, work processes, leadership, ICT, et cetera (Twynstra & Gudde, 2010).

These implications can be bundled in three dimensions. Twynstra Gudde<sup>3</sup> have described in their white paper with respect to the NWW three dimensions which need to be taken into account when implementing NWW; human being & organization, information provision and the work environment. The Pension & Life division has bundled these adaptations in a project called '*Vertrouwd Samen Werken*' (abbreviation VSW). The aim of this project is to enable employees to work time and place independent. The VSW program has three dimensions

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<sup>3</sup> Twynstra Gudde is a consultancy organization located in the Netherlands. In addition to the advisory part, Twynstra Gudde also did research to for example the NWW.

that fit within the dimensions of Twynstra Gudde, called; mental, virtual and physical. The division believes that changes can only be realized if these three mentioned dimensions are taken into consideration.

The physical and virtual dimension involves investments in the technical area, to enable employees to work time and place independent. The virtual dimension involves IT-facilities and examples are laptops, mobile phones and internet connection (Vos & van der Voordt, 2001).

The physical dimension is focused on the work environment and the workplace design. The focus is on the workplace at the office and the appearance; however the workplace at home becomes more and more important (Vos & van der Voordt, 2001).

The mental dimension is more or less aimed at the accompaniment of employees and their managers to the new work concept. The Pension & Life division has completed the mental part with the components *trust*, *social cohesion* and *result-oriented leadership*. The division formulated the essence of the mental dimension as follows; *from command and control to autonomy and own initiative* (based on internal documentation of the Pension & Life division). This requires adaptations in the management style; leadership is not longer based on managing on presence but managing on output. It also requires adaptations based on autonomy; colleagues are not able to see each other everyday which could have an influence on the social cohesion. Finally, the essence has consequences for the relationship between employee and manager and between employees.

Employees and managers do not see each other that often due to autonomy and own initiative. The relationship will be more and more based on trust instead of control.

This research can be considered as a business case and focuses on two sides. On the one hand the *hard side* of the NWW will be researched. The costs of the virtual and physical dimension give interpretation on the *hard side*. The mental dimension involves the *soft side* of the NWW. The *soft side* is aimed at the effects of NWW on the components *trust*, *social cohesion* and *result-oriented leadership*. The mentioned sides of NWW are treated separately in the research.

In addition, further research was conducted to determine if NWW leads to benefits for the Tilburg location, where NWW has been implemented. In addition, a comparison can be made between the Apeldoorn and Leeuwarden locations where NWW has not been implemented yet and the Tilburg location where it has been implemented. Moreover, trust, result-oriented leadership and social cohesion will be measured as to whether they can be regarded as moderating variables.

The problem statement leads therefore to the following research question;

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*'Which influences do the dimensions mental, virtual and physical have on the cost and benefit analysis based on the New World of Work for the Pension & Life division of Achmea?'*

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The research question can be further divided into sub questions;

1. *What costs and benefits arise on the virtual and physical dimension after implementing 'The New World of Work?'*
2. *What kinds of effect do the components trust, social cohesion and result-oriented leadership have on the relationship between 'The New World of Work' and the benefits?*
3. *Based on sub question 1 and 2, what advice can be given to the management of the Pension & Life division? '*

The central research question and the sub questions imply that the dimensions are very static, which is not the case. For example, one of Achmea's objectives is to reduce the FTEs per work desk (FTE norm) per division. The objective is to reduce from 0.8 FTE to 0.7 FTE by the middle of 2013. This objective has consequences for the total number of workplaces available and therefore some employees will be forced to work somewhere else. However, employees need facilities to work place and time independent, which is part of the virtual dimension. During the sub questions the dimensions are treated as separate parts, however in the conclusion a comprehensive view will be given of the three dimensions.

#### **1.4 Research objective**

The Pension & Life division is on the verge implementing NWW. Implementing NWW has extensive consequences for leadership, ICT, regulation, work environments et cetera. These consequences are subdivided into three dimensions; physical, virtual and mental.

The research objective of this thesis is to research the current status of the mental, virtual and physical dimensions. Moreover, the costs of the current status considering the virtual and physical dimensions will be calculated. Considering the current status of the mental dimension, a questionnaire will be distributed.

The extent to which the division works according to NWW and thus is able to profit from the expected benefits will be determined. Finally, the costs of the virtual and physical dimensions will be calculated when the division is working completely according to NWW. In addition, advice will be given regarding the mental dimension based on the results of the questionnaire.

To summarize the objective of this research; *The objective of this research is to get insight into the current status of the mental, physical and virtual dimensions in order to determine the extent to which the division could profit from the benefits of 'The New World of Work'.*

##### **1.4.1 Scientific objective**

Although the current literature has extensively researched the relationship between the components of the NWW (see section *Definition of 'The New World of Work'*) and the benefits, the conditions under which these benefits arise, remain unexplained. Moreover, the components of the mental dimension, lack evidence and are inconsistent in relation to the benefits.

During this thesis the physical, virtual and mental dimension will be considered as moderating variables. Shadish, Cook and Campbell (2002) describe a moderating variable as a variable that influences the direction or size of an observed effect.

In addition to mentioned moderating variables, one more moderator will be added, which function as a control variable. The control variable involves; type of employee and the location. The Pension & Life division has distinguished three types of employees called knowledge workers, production workers and mobile workers. In addition, the division consists of four locations; Apeldoorn, Amsterdam, Leeuwarden and Tilburg.

For example, the component trust is often regarded as a variable which has a direct effect on performance and group processes. However, the role of trust as a moderating effect has been researched limited. Studying trust as a moderating effect can perhaps lead to different views and deliver valuable information. The aim of this research is to consider the current literature on the components of the mental dimension and to explore their role in the NWW. In the figure below, the conceptual models of this thesis are shown. The first part of this research involves the virtual and physical dimension and the second part involves the mental dimension.



Figure 1a: The conceptual research model based on the physical and virtual dimension

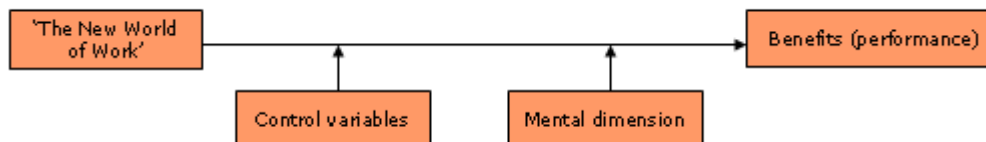


Figure 1b: The conceptual research model based on the mental dimension

### 1.4.2 Practical objective

Finally, the practical objective of this research is to provide insight into the physical, virtual and mental dimensions. A main issue is to research which sub-components provide these dimensions. Implementing these sub components requires investments, for example, when the objective is to work time and place independent, employees need a laptop which requires an investment in the virtual dimension. Providing a clear overview regarding the dimensions and the investments involved is valuable information for the management of the Pension & Life division. Furthermore, the management should not overlook the implications of NWW for the employees and their managers. The extent to which employees and their managers are able to work according to the NWW will also be researched; this also provides valuable information to the management. When a clear overview exists regarding the *hard* costs and *soft* benefits, a comprehensive advice will be delivered.

## 2. Theoretical Framework

The first part of this research is predominantly based on a literature study, and during this study the first and second sub question will be answered. The first sub question is based on the term 'The New World of Work'. The NWW is an 'umbrella' and involve the components; flexibility, virtual teams and working at home. These components will be used during the description of the NWW. The reason why these components are used is described in section 2.1 *Definition of 'The New World of Work'*.

In a lot of cases these components are in the same breath as the benefits of NWW. This literature study describes the components and the benefits which could occur. Before the Pension & Life division could possibly profit from the benefits, investments have to be made. The physical and virtual dimensions require investments on for example; ICT, information provision and design of the buildings. Therefore, the cost centres of the physical and virtual dimension are also discussed in this literature study.

The sub question which will be elaborated during the first part of the theoretical framework is the following;

*'What costs and benefits arise on the virtual and physical dimension after implementing 'The New World of Work?'*

### 2.1 Definition of 'The New World of Work'

Nowadays, organizations have to cope with and respond to a lot of changes. Responding quickly to customers' needs, the increase of global competition (Grenier & Metes, 1995; Miles & Snow, 1986, 1992), larger networks and thereby more connectivity, are issues that organizations have to respond to on worldwide and national level.

To go one step below the national level, the organizational level is also subject to changes, specifically the work style. These changes fall under the heading NWW.

In 1995, it was Microsoft that brought this new work style to the Netherlands. Gates (2005) published a whitepaper in which he explained that because of the worldwide connectivity, employees should be connected, always and anywhere. According to Microsoft the latest technology plays an important role in the NWW. Furthermore, the organizations and the employees become more flexible during working hours and in their work environment.

Because of the differences in use and the broadness of the term, it is difficult to define the NWW unilaterally. Bijl (2009) author of the book 'Aan de slag met het Nieuwe Werken', defined the concept as 'a vision to work more effectively and efficient and also more enjoyable for the employee and the organization' (page 62). In this vision, a central role will be fulfilled by the employee. The employee gets – within boundaries – the freedom and space to determine by themselves where, when, with what and who he or she likes to work (Bijl, 2009).

Baane, Houtkamp & Knotter (2010) published a book 'Het Nieuwe Werken Onttrafeld' in which they researched different cases. The authors defined NWW on the basis of four principles, (page 54);

- 1) Anywhere and anytime (working independently of time and place), the current technology makes it possible to work 24 hours a day/ seven days a week. Due to the same technology, it enables employees to get access to information everywhere (Baane et al., 2010). It gives the employees a choice to decide where and when to work.
- 2) Unlimited access and connectivity (free access to information, knowledge and experiences), due to having more interaction with each other, the organization will become flatter (Baane et al., 2010).

Working together, supporting creativity and sharing each other's qualities become more important. It should be supported by technology and systems.

- 3) Manage your own work, the employees have the freedom where to work and when to work. This could have an effect on the visibility of the employees. In addition, employees like to have more freedom to decide on their own how to arrange their work (Baane et al., 2010). In consultation with the manager, arrangements are made based on output. When an employee works and how many hours disappear into the background, it is about results (Baane et al., 2010).
- 4) My size fits me (flexible labour relations), the new work style is based on an *adult employment* relationship (Baane et al., 2010). Working conditions are based more and more on flexibility and rewards from their contribution to the team or the organization. From the employee a certain 'employer' is expected (Baane et al., 2010).

The Pension & Life division of Achmea has translated the NWW into the name 'Vertrouwd Samen Werken'. The division has defined VSW as a way in which employees and management organize their work in a contemporary way. The modern requirements of the organization are taken into account, but also the wishes of the employee. Thereby, the current possibilities of techniques should be used. The NWW is predominantly based on 'working smarter'; make a smarter way to use each other and also conduct your work smarter.

Taking the four mentioned definitions into consideration, the following definition can be given;

*'The New World of Work' is an innovative way of work whereby the employee is able to work time and place independent. It is supported by a flexible work environment which is facilitated by the latest technology and ICT. In addition, due to the flexibility, more responsibility and autonomy move towards the employee. This new way of working will result in a higher efficiency and effective way which provides more joy to the organization and the employees. Moreover it is a precondition for Achmea that customers do not have any inconvenience when NWW is implemented.*

In this definition the three mentioned dimensions can be recognized. The physical, virtual and mental dimensions are represented.

During the introduction of this chapter the words 'flexibility, virtual teams and working at home' have already been briefly mentioned. The NWW as a comprehensive concept lacks scientific literature, therefore in this research the NWW is divided into the mentioned sub-literature items.

A decision was made to ravel out the NWW in the three mentioned components for a few reasons.

1) The situation of the Pension & Life division is taken into consideration. As mentioned before, the division is separated over four locations. Due to the separation of employees, project teams occurred nationally. The virtual team component is therefore taken into consideration. 2) Actually, flexibility is inextricably connected with the NWW, because the core of the NWW is about flexibility in the work environment and working hours. Employees have the possibility to choose where they work; at the office or at home. Therefore this component is taken into consideration. 3) The last component involves working at home. This component arose due to the flexibility component. The division offers flexibility in the work environment. An employee has the possibility to work at home and therefore this component is taken into consideration.

## **2.2 Flexibility**

The emergence of the NWW can partly be ascribed to the current changes in working environments nowadays. These changes and developments are predominantly challenges for management; they have to design their organizations in a way which responds to these challenges.

A word which first comes to our mind is flexibility. Management has to be able to design a more flexible organization (Hirschhorn & Gilmore, 1992), and therefore flexibility is becoming a more important topic (Golden & Powell, 2000).

Previous research on flexibility has acknowledged the difficulty to define flexibility. It could be expressed in several explanations which is called polymorphous (Reilly, 1998).

To start with a rough definition, Powell and Golden (2000) defined flexibility as 'the ability to adapt' (page 375). This definition is a very broad one and should be further operationalized. Powell and Golden (2000) defined flexibility in five forms;

- 1) Numerical flexibility, the first type of flexibility is to tune the number of employees based on the business needs. This can be achieved by fixed-period labour contracts, or in seasonal, causal or temporary employment (Golden & Powell, 2010).
- 2) Functional flexibility, 'a form of flexibility whereby employers achieve more effective internal allocation of labour through improved deployment' (Golden & Powell, 2010; page 10).
- 3) Temporal flexibility is predominantly based on flexibility in working hours. Examples of temporal flexibility are flexible workweeks, flexitime and term-time contracts.
- 4) Locational flexibility, flexibility which describes the different ways to employ employees outside the usual workplace. From partly home based to mobile workers, teleworkers and full outworkers (Golden & Powell, 2000).
- 5) Financial flexibility, this type of flexibility is based on wages. According to Sparrow (1997) performance-related pay is a typical example of financial flexibility.

The type of flexibility that is applicable to the Achmea business case is temporal flexibility. Employees have the freedom to determine their own work hours and thus their work schedule. In scientific literature temporal flexibility is often described as flexitime. Table 2 shows the definition and operationalization of the term flexitime.

Author	Definitions	Operationalization
Baltes et al., (1999)	Definition of alternative work schedules; <i>Alternative work schedules are schedules that do not fit the fixed 8-hr day or 40-hr week (page 3).</i>	- <i>Compressed work week;</i> 'Compressed into fewer than 5 days by increasing the number of hours an employee is required to work per day' (page 3). - <i>Flexitime;</i> 'The possibility for employees to arrive and leave their work within certain boundaries' (page 3).
Halpern et al., (2005)	Definition of Flexitime; <i>Giving the employees the freedom to manage their time (page 159).</i>	- <i>Time flexible work policies;</i> 'Time flexible work policies can be defined as policies based on making work-life and family-life more compatible so that workers will experience less stress and the work will not suffer' (page 159).
Shepherd et al., (1996)	Definition of Flexitime; <i>Flexitime is defined as a formal or informal arrangement between employers and their employees, that allow the employee at least some discretion or control over the specific hours of the day or week when the work has to be performed (page 127).</i>	- <i>Flexible work hours;</i> 'Flexible work hours are defined as a program which have specific hour hours when employees are required to be at work and additional hours that may be worked at the employees' discretion, provided the core plus the additional hours equals the agreed total hours' (page 127).
Lee & Devoe (2012)	Definition of Flexitime; <i>The ability to schedule flexible starting and quitting times, sometimes with a core hours requirement (page 4).</i>	- <i>Organizational profitability;</i> 'The profit generated by the organization' (page 14).

Table 2: Definitions of flexitime and the operationalization



Researchers have defined flexitime in their own way, even Baltes et al., (1999) have used the term alternative work schedule instead of flexitime. However a strong overlap between the various definitions can be recognized. The definition that will be used during this research is;

*'Flexitime is a form of an alternative work schedule, which is a formal and informal agreement between employer and employee. The responsibility moves from the employer to the employee and he/she is able to manage their own time and work whereby, in some cases, core hours are required'.*

As described in the beginning of this section, the term flexibility can be expressed in several ways. In this research the term flexibility will be expressed in flexitime.

Due to the increase of flexibility, the traditional organizational boundaries change into more psychological boundaries (Hirschhorn & Gilmore, 1992). The boundaries no longer exist in the chart of the organization but in the minds of the employees and managers. How to recognize these boundaries, how to cope with them and translate them in a productive way is the essence of management in flexible organizations (Hirschhorn & Gilmore, 1992).

### **2.2.1 Flexibility and expected benefits**

Researchers mentioned in the table above have related flexitime to some benefits that arise after the implementation. The first article which will be discussed is the article of Baltes et al., (1999). In the operationalization of the two components, the researchers used flexitime and a compressed workweek. The two forms lead to different benefits. The article of Baltes et al., (1999) is used in this theoretical framework because both kinds of operationalizations have been implemented by Achmea.

To start with flexitime in organizations, except for the core hours, employees are allowed to arrive and leave the office at a time of their choosing. These employees experience less job stress which suppresses negative reactions. This flexibility in schedule provides more autonomy, which leads in turn to higher performance (Hackman & Oldham, 1975). Baltes et al, (1999) expect that flexitime is positively related to a better job performance.

Furthermore, job stress can also be linked to absenteeism. Prior research has shown a positive link between a decrease in employee stress to a decrease in absenteeism (Parker & Kulik, 1995). In addition misuse of sickness is no longer necessary because the employees have the ability to adjust their work schedule to their own preferences (Ronen, 1981). Due to this analysis it can be expected that flexitime will lead to a decrease of absenteeism.

The final benefits flexitime could lead to job satisfaction and satisfaction with the work schedule (Baltes et al., 1999). According to Pierce et al., (1989); and Ronen (1981), introduction of a flexitime schedule should lead to a more positive attitude to the job. This expectation is based on a few previous conclusions. First, the need of employees to get autonomy and independence can be fulfilled which helps the employees to fulfil self-actualization needs (Ronen, 1981). The theory of Ronen (1981) coincides with Hackman's and Oldham's (1975) theory which predicts that increased autonomy positively leads to job satisfaction. More previous research arrives at the same conclusions (Fried, 1991; Roberts and Foti, 1998). Therefore, Baltes et al., (1999) expect positive correlations between flexitime schedules and job satisfaction, and between flexitime schedules and satisfaction with the work schedule.

Moreover, Baltes et al., (1999) also paid attention to the benefits of the compressed workweek. Pierce et al., (1989) used the circadian rhythm approach, and suggested that employees perform at their best for only a few hours a day, which is called 'peak time'. Eventually, if employees are using a compressed workweek, it will result in more work hours on a suboptimal level. Furthermore, tiredness also has influence within the advent of

a compressed workweek (Ronen, 1994). It negatively affects the performance. In conclusion, when tiredness is increased, it results in more stress for employees and consequently a decrease in productivity and performance (Baltes et al., 1999).

Achmea employees are allowed to use a compressed workweek, which means for example, enjoying a three-day weekend. Because of the longer weekend, employees are able to find a better work-life balance according to Baltes et al., (1999). Employees are able to respond in a better way to work and non-work conflicts, which leads to a reduction of stress and finally leads to a decreased absenteeism (Parker & Kulik, 1995). Pierce et al., (1989) and Baltes et al., (1999) strongly suggest that the decrease of absenteeism is the result of the compressed workweek.

The last items are the proposed relationship between the compressed workweek and job satisfaction, and satisfaction with the work schedule. According to Ronen (1984) a compressed workweek leads to more autonomy, job knowledge and responsibility which positively affect the attitude to the job itself. As mentioned during the discussion of the flexitime, Hackman and Oldman (1976) have predicted that an increase of autonomy leads to a higher job satisfaction. In addition, Baltes et al., (1999) also expect that the advent of a compressed workweek will lead to a higher job satisfaction and more satisfaction with the schedule. However, a small comment has to be made, because previous research has shown mixed results regarding that expectation.

Finally, Baltes et al., (1999) studied previous research and it seems likely that some relationships are moderated by a number of variables. First, Baltes et al., (1999) expect that the relationship between the effects of alternative work schedules can vary as a result of the type of employee. Managers and professionals are expected to be less affected by alternative work schedules, see section 2.9 *Control variable: type of work*.

The second moderator is applicable to the expectation between flexitime interventions and the various criteria which were mentioned earlier (e.g., job performance, absenteeism, job satisfaction etc.). More flexitime interventions (e.g., fewer daily core hours) lead to bigger positive effects than less flexible time interventions.

The last moderator is the sustainability of the alternative work schedule effects. The effects of an alternative work schedule decrease over time when the employees get used to the freedom, and will require even more. Therefore, it is expected that the positive effects of an alternative work schedule will decrease over a period of time (Baltes et al., 1999).

As the article of Baltes et al., (1999) is dated, although still rated as very good, a few benefits will be discussed according to a more recent article.

Halpern (2005) argued that by providing flexibility to employees, the organization will benefit in the end when the right way to deal with this flexibility is found. If the organization allows the employee to meet family obligations, in the end the organization will reduce costs.

Halpern (2005) investigated that employees with flexible work policies have less stress, a higher commitment to the employer, and they will reduce costs because of fewer absences, fewer missed deadlines and fewer days late.

The research of Halpern (2005) has been confirmed by Baltes et al. (1999); Christensen & Staines (1990); Hill et al. (2001); Krausz & Hermann (1991); Perrucci et al. (2007). If employers offer flexible work schedules to employees, the employees' satisfaction about work-family balance, work shift and the job tends to be higher. Shepherd et al., (1996) also find in their research, the positive relationship between flexible work hours and productivity. An increase in productivity is expected due to more commitment (Shepherd et al., 1996).

### 2.2.2 Flexibility and the influence of strategy

One of Achmea's objectives in 2012 is cost consciousness, see section 1.2 *Achmea background*. Lee and DeVoe (2012) focused in their research on a cost-reduction strategy and the benefits of flexitime. Therefore their article fits within the scope of this research and will be discussed shortly.

Recently, Lee and DeVoe (2012) published a research in which 'they focus to provide a general assessment on flexitime that could influence profitability of the organization' (page 3). Lee and DeVoe (2012) investigated the relationship between flexitime's alignments with the strategy of the organization, whereby the strategy is considered as a contextual variable for the prediction of whether flexitime will lead to a higher profitability of the organization. Lee and DeVoe (2012) examined two different types of strategies; a cost-reduction strategy and a quality enhancement strategy. Organizations that pursue a cost-reduction strategy have a focus on reduction of costs and improvement of savings, while flexitime is a benefit as a result of a positive influence on the employees (Lee & Devoe, 2012). When a cost-reduction is pursued, employees experience negative consequences like a lack of trust and less turnover so that these negative consequences override the positive benefits of flexitime (Lee & Devoe, 2012).

Furthermore, the negative feelings and emotions of employees caused by the cost-reduction strategy, probably do not lead to more productive behaviour such as a decrease of absenteeism.

In a quality enhancement strategy employees are treated as an asset and because of that treatment, employees are more willing to return to the employers (Eisenberger, Fasolo & Davis-Lamastra, 1990), through a higher productivity for example. Lee and Devoe (2012) expect that the type of strategy that is conducted by the company will influence the extent to which the company will profit from the benefits.

Below is a schematic view of the different operationalizations of flexitime and the expected benefits.

Author	Operationalization	Expected benefits
Baltes et al., (1999)	<ul style="list-style-type: none"> <li>- <i>Compressed workweek</i>;</li> <li>'Compressed into fewer than 5 days by increasing the number of hours an employee is required to work per day' (page 3).</li> <li>- <i>Flexitime</i>;</li> <li>'The possibility for employees to arrive and leave from their work within certain boundaries' (page 3).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Compressed workweek</i>;</li> <li>1) Decrease in job performance</li> <li>2) Less absenteeism</li> <li>3) Higher job satisfaction</li> <li>4) Higher satisfaction with the schedule</li> <li>- <i>Flexitime</i></li> <li>1) Better job performance</li> <li>2) Less absenteeism</li> <li>3) Higher job satisfaction</li> <li>4) Higher satisfaction with the schedule</li> </ul>
Halpern et al., (2005)	<ul style="list-style-type: none"> <li>- <i>Time flexible work policies</i>;</li> <li>'Time flexible work policies can be defined as policies based on making work-life and family-life more compatible so that workers will experience less stress and the work will not suffer' (page 159).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Time flexible work policies</i>;</li> <li>1) Cost reduction</li> </ul>
Shepherd et al., (1996)	<ul style="list-style-type: none"> <li>- <i>Flexible work hours</i>;</li> <li>'Flexible work hours are defined as a program which have specific hour hours when employees are required to be at work and additional hours that may be worked at the employees' discretion, provided the core plus the additional hours equals the agreed upon total' (page 127).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Flexible work hours</i>;</li> <li>1) Higher productivity</li> </ul>
Lee & Devoe (2012)	<ul style="list-style-type: none"> <li>- <i>Organizational profitability</i>;</li> <li>'The profit generated by the organization' (page 14).</li> </ul>	<ul style="list-style-type: none"> <li>- <i>Organizational profitability</i>;</li> <li>1) The type of strategy (cost-reduction or quality enhancement) has an influence on the extent to which a company profits from the benefits of the NW'W</li> </ul>

Table 3: Operationalization of the term flexitime and the expected benefits

### 2.2.3 Flexibility and the significance of the benefits

After the statistical analysis, Baltes et al., (1999) arrived at the following results based on the benefits of the flexitime. Flexitime favourably influences absenteeism, job performance, satisfaction with the schedule, and job satisfaction. The mentioned sequence is based on the statistical analysis, so flexitime influences absenteeism most.

The other consequence of flexibility which Baltes et al., (1999) studied are the effects of the compressed workweek. The analysis showed mixed results; job satisfaction is most influenced and the satisfaction with the schedule thereafter. However, contrary to the expectation, job performance and absenteeism are not significantly affected (Baltes et al., 1999).

The final results of the article of Baltes et al., (1999) which will be discussed, are the moderators. The first moderator is about the consequences of flexitime work schedules for managers; see section 2.9 for the statistical outcome. The second moderator was based on the number of interventions. Contrary to the expectation, less flexible hours (five or more core hours) result in a bigger size of effect than more flexible schedules (less than five core hours).

The last moderator was the time in which the effect is noticeable. The expectation was that the effects would be short lived. However, contrary to that expectation, effects arrive at a baseline level and consequently the short time effects are not bigger than the long flexitime intervention effects, which can be applied to all positive outcomes (Baltes et al., 1999).

The expectation supported by the article of Halpern et al., (2005), is the positive effect that the availability of flexible work policies have on the health symptoms of stress. Employees have more commitment to the employer and finally have a positive effect on the direct costs of the employer. Additionally, the more flexible work policies that are available, the more loyalty, the fewer reported symptoms of stress and the more reduced costs. Due to reductions in days late at work, reduced absenteeism and missed deadlines (Halpern et al., 2005). Finally, Shepherd et al., (1996) expected flexible work hours to have a positive influence on productivity. Statistical analysis has significantly proved that relationship.

The last article reviewed is the article of Lee and DeVoe (2012). In their statistical analysis they concluded that the type of strategy that the organization conducts, (cost-reduction or quality enhancement) do not have a statistical significance. However, the descriptive statistics show that flexitime plays an important role on the profit of the organization. The researchers concluded that organizations using flexitime earn higher profits than organizations that do not use flexitime.

### 2.3 Virtual teams

The second component of the NWW is virtual teams. The increased amount of literature about virtual teams has resulted in a proliferation of definitions (Martins et al., 2004). Martins et al., (2004) have examined these definitions and concluded that the core of these definitions have a clear overlap, however a small variation exist in the specifics. In general, the core of the definition is that functioning virtual teams cross over different boundaries relying on technology (e.g. Bell and Kozlowski, 2002; Lipnack and Stamps, 1999; Lurey and Raisinghani, 2001). Martins et al., (2004) integrated the traditional and the new definitions and they arrived at the following definition, which is leading in this thesis;

*'Virtual teams are teams whose members use technology, working across locational, temporal and relational boundaries in varying degrees, to accomplish an interdependent task'* (page. 808). The locational boundary refers to the physical spread of team members, which can involve different geographic locations or different workplaces at the same geographic location (Martins et al., 2004). The temporal boundary involves the lifecycle and synchronicity (Martins et al., 2004). The lifecycle refers to the existence of the team, which can be temporary or permanent, the synchronicity refers to the member interaction and the timing of the task which

the group has to fulfil (Martins et al., 2004). The last boundary involves the relational perspective. It refers to the differences between the team members on the aspect of obligations to other organizations, departments, and teams (Martins et al., 2004). These mentioned boundaries can be denied by use of technology, whereby the ability to communicate with each team member is important.

Virtual teams will continue to grow. Organizations implement a team or are willing to implement a team in future (Lipnack and Stamps 1997; McDonough et al., 2001). The two reasons for this development are; firstly, technological and organizational developments enable it and it is desirable to use virtual teams. Secondly, virtual teams involve business benefits literature (Solomon, 2001; Townsend et al., 1998). However organizations have to take into account the challenges that are present in the virtual context (Lacono and Weisband, 1997; Victor and Stephens, 1994).

The challenges are based on the composition, the process and the outcome of the team process. The composition involves the input variables, which represent the design and the compositional characteristics which are knowledge, skills and abilities (KSAs), group size, technology, member personalities, task and experience (Hackman and Morris, 1975; Martins et al., 2004). Subsequently, the team process contains the question of 'how' teams achieve their team outcomes (Weingart, 1997). This can be further classified into the planning process, interpersonal process and action process (e.g. Marks, Mathieu & Tan, 2002). The planning process involves a mission, strategy formulation, goal setting and other processes which are focused on group efforts (Martins et al., 2004). The interpersonal process is based on the relationships among group members; it includes trust, cohesion, conflict, social integration and tone of interaction. The action process is based on the dynamics which occur together with the performance such as coordination, communication and monitoring of the group's progress (Martins et al., 2004).

The team process finally results in a team outcome which can be divided into affective and performance outcomes (Martins et al., 2004). Affective outcomes involve, for example the member satisfaction on which trust and social cohesiveness have influence. Examples for performance outcomes can be team creativity, learning and knowledge management.

Studying the actual literature about teams, different types of teams are defined. McDonough et al., (2003) have defined three different types of teams; co-located, virtual and global teams. One comment should be made here, during this explanation the co-located and face-to-face teams are used interchangeably. Webster and Wong (2008) made within the separation of McDonough et al., (2003) a sub separation based on virtual teams. Virtual teams can be regarded as purely virtual, which means completely distributed, or semi-virtual, which means composed of a local subgroup (Webster & Wong, 2008). Table 4 shows an overview of the different types of teams.

McDonough et al., (2003) stated that co-located or face-to-face teams consist of individuals who work together face-to-face in the same physical area and are culturally similar (McDonough et al., 2001). Virtual teams also have the similar culture; however these team members are located in different parts of the same country (McDonough et al., 2001). Only the co-located and virtual team will be discussed because the division uses these types of teams and therefore both fall in the scope of this research.

Author	Types of teams	Operationalization
Webster & Wong (2008)	<ul style="list-style-type: none"> <li>- Co-located or face-to-face teams</li> <li>- Semi-virtual</li> <li>- Purely virtual</li> </ul>	<ul style="list-style-type: none"> <li>- Group identity</li> <li>- Communication</li> <li>- Trust</li> <li>- Project satisfaction</li> </ul>
Thomson & Coovert (2002)	<ul style="list-style-type: none"> <li>- Face-to-face teams</li> <li>- Virtual teams</li> </ul>	<ul style="list-style-type: none"> <li>- Decision making process</li> <li>- Team outcome</li> </ul>
Andres (2002)	<ul style="list-style-type: none"> <li>- Face-to-face teams</li> <li>- Virtual teams</li> </ul>	<ul style="list-style-type: none"> <li>- Team productivity</li> <li>- Group process satisfaction</li> </ul>

Table 4: The different types of teams and the operationalization

### 2.3.1 Virtual teams and expected benefits

Benefits arising after the implementation of a virtual team will be discussed through the use of a number of articles. The first article is from Webster and Wong (2008) who described a few components that explain – to a certain extent – the differences between teams. Webster and Wong (2008) studied the components; group identity, communication, trust and project satisfaction.

The first component to discuss is group identity. The group identity 'represents the team members' sense of oneness with the group and consists of a cognitive component of belonging to an effective component of emotional attraction, and a behavioural component of joint effort towards a common goal' (Asforth, 2001; Webster & Wong, 2008; page 43). Webster and Wong (2008) state that the team members who identify themselves more with the team, perform better (Vogel, Davison & Shroff, 2001) and perceive cooperation, confidence, personal satisfaction and have a higher trust (Fiol & O'Conner, 2002). The group identity helps individual team members to feel concern of inclusion, order, belonging and structure (Fiol, 2002). A wider description of the component social identity (or social cohesion) is found in the second part of the theoretical framework.

Consequently members of co-located teams experience the group identity more than members of semi-virtual teams do.

Within all types of teams, communication is an important issue. Some researchers have argued that technology transforms the way a team works. This transformation can be confirmed for all type of teams because they all make use of email, shared databases and shared workspaces (Webster & Wong 2008). According to Mortensen and Hinds (2001) all types of teams use communication as often. However, the members of the face-to-face teams are *able* to communicate more frequently than the semi-virtual teams. Moreover, face-to-face team members are able to meet each other informally, have more occasions to observe other members' behaviour and non-verbal communication. Thomson and Coovert (2002) also researched the communication of different types of teams. Because of the possibility that face-to-face team members have to communicate more frequently, these members have more the idea that other team members are inclined to understand their ideas than semi-virtual team members.

Thirdly, trust can be defined as a main issue. Within the context of teams, trust can be defined as the confidence or belief in a person or organization's fairness, integrity and reliability (Lipnack & Stamps, 1997). An

extensive description of the component trust is found in the second part of the theoretical framework. The expectation is that among face-to-face team members the level of trust is higher than among semi-virtual team members.

Finally, these components result in project satisfaction. This represents the overall positive and negative feelings when finishing a project. Some researchers state that satisfaction is higher for face-to-face teams than for virtual teams (e.g. Gallupe & McKeen, 1990; Hollingshead, McGrath and O'Connor, 1993; Thompson & Coovert, 2002). However, mixed results are also found (Saunders, 2000). Moreover, some researchers have suggested that although differences exist, the satisfaction of virtual team members arrive, after a certain period, at the same level as for face-to-face team members. Virtual team members have to develop a way to work during time and by norms that result in fewer losses (Webster & Wong, 2008).

The second article discussed is written by Thomson and Coovert (2002). They published a research that discusses the decision-making process in face-to-face and virtual teams, and the preceding process differs in both types of teams. Predominantly in virtual teams, technology is of great importance and in particular the computer. The computer affects the team process positively as well as negatively. According to Thomson and Coovert (2002) the computer benefits a team by decreasing the pressure to conform to values and norms of the teams (e.g. Dubrovsky et al., 1999; Adrianson & Hjelmquist, 1991; Weisband, 1992), increasing equal participation and decreasing individual inhibitions. The negative affects of computers on teams are based on the recognition of expertise between team members. These teams are faced with coordination and communication problems (Foster & Coovert, 2000; Straus, 1996; Straus & McGrath, 1994; Dubrovsky et al., 1991). Moreover, members of virtual teams are less attentive to other team members' input than face-to-face teams (McLeod et al., 1997; Rintel & Pittam, 1997). Thomson and Coovert (2002) expect face-to-face team members have more the idea that other team members are inclined to understand their ideas than virtual team members.

Previous research has suggested that the perception of influence coincides with the perception of attention (McLeod et al., 1997). Moreover, the perception of influence is facilitated by nonverbal feedback. Nonverbal communication disappears through the use of technology and computers.

In contradiction with virtual team members, face-to-face team members are more inclined to think that they have influenced the team decision.

Andres (2002) also studied the process of face-to-face team and virtual teams. Thomson and Coovert (2002) also studied the team process. Andres (2002) has the same expectation about the team process as Thomson and Coovert (2002). Team members of face-to-face teams are more satisfied about the team process than virtual team members.

Finally, the team process results in a team outcome. As described earlier, Martins et al., (2004) have made the distinction between affective and performance outcomes. The affective outcome involves the degree of satisfaction.

Nowadays, more research pays attention to the team members' satisfaction in relation to the technology. The pattern of research shows that members are more satisfied when they have to fulfil an independent group task; and this also works the other way around. The degree of satisfaction decreases through more interdependent tasks. Because of the latest technology, employees are less satisfied due to the interdependent tasks (Thomson & Coovert, 2002). This expectation is in contradiction with Webster and Wong (2008) because they discussed previous literature and this showed mixed results. Therefore Webster and Wong take an exploratory stance.

The last item which will be discussed is the performance outcome. Performance is regarded as the amount of fulfilled project expectations over the past five years (McDonough et al., 2001). The main difference between

the types of teams is that co-located teams see each other often, and are able to confront each other with issues instead of ignoring them. Therefore co-located teams have the possibility to overcome these challenges, rather than virtual teams. Co-located teams are therefore associated with higher performance outcomes than virtual teams (Thomson & Coovert, 2002). Moreover, not only the performance is higher in face-to-face teams but also the productivity. Andres (2002) expects the productivity in face-to-face teams to be higher than in virtual teams. Table 5 shows the expected benefits of the different types of teams.

Author	Operationalization	Expected benefits
Webster & Wong (2008)	<ul style="list-style-type: none"> <li>- Group identity</li> <li>- Communication</li> <li>- Trust</li> <li>- Project satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>- Members of face-to-face teams will communicate more and have more positive feelings regarding group identity and trust than the other types of teams.</li> <li>- Project satisfaction will differ between the types of teams.</li> </ul>
Thomson & Coovert (2002)	<ul style="list-style-type: none"> <li>- Decision making process</li> <li>- Team outcome</li> </ul>	<ul style="list-style-type: none"> <li>- Face-to-face team members have more than virtual team members the feeling that other team members are inclined to understand their ideas.</li> <li>- Face-to-face team member will be more inclined to believe that they have influenced the team decision.</li> <li>- Face-to-face team members are more satisfied than virtual team members</li> </ul>
Andres (2002)	<ul style="list-style-type: none"> <li>- Team productivity</li> <li>- Group process satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>- The expectation is that productivity in face-to-face teams is higher than in virtual teams.</li> <li>- Groups working in a face-to-face setting experience greater process satisfaction than virtual team members.</li> </ul>

Table 5: Operationalization of the term virtual teams and the expected benefits

### 2.3.2 Virtual teams and the significance of benefits

Webster and Wong (2000) compared face-to-face team members with virtual team members using the components; group identity, communication, trust and project satisfaction. Regarding group identity, employees perceive a similar level of group identity. With the component communication a difference exists, the communication is higher in semi-virtual teams. However it depends on the type of team and which communication channel is used. Face-to-face team members make more use of face-to-face communication and the telephone. Semi-virtual team members make more use of video conferencing and email.

The last component involves trust, and based on the average level, trust is higher in face-to-face teams than in semi-virtual teams.

Finally, Webster and Wong (2000) also researched project satisfaction. The statistical analysis has proved that virtual teams are more satisfied than face-to-face team members.

The first and second expectation which is tested according to the article of Thomson and Coovert (2002) is based under the heading communication. After testing it statistically, the relationship is significant which means that virtual team members feel themselves more ignored than face-to-face team members. The second expectation was based on the influence of the team decision. Face-to-face team members have more the feeling that they are able to influence the team decision. In line with the previous expectation, this expectation is also significant.

The third expectation was based on the effective performance (Martins et al., 2004) and mainly focused on the satisfaction. It was expected that face-to-face teams would be more satisfied than virtual teams. This expectation is also supported; face-to-face team members are more satisfied than virtual team members (Thomson & Coovert, 2002).



The last article discussed is based on Andres (2002). Both expectations are significant which means that productivity and process satisfaction are higher in face-to-face teams.

## 2.4 Working at home

The last component of the NWW that will be discussed is working at home. Working at home will be considered in the theoretical framework as a broad definition which also includes teleworking.

In 1975, it was Nilles (1975) who first used the term 'telecommuting' and it has been launched as a strategy which leads to a decrease in real-estate cost for organizations (e.g. Egan, 1997).

Moreover, as described under the components flexibility and virtual teams, teleworking is also a component for which an universal definition is not accepted (Martinez-Sanchez, 2007), 'many definitions see telework as the organization of work, using information and communication technologies (ICT) that enable employees and managers to get access to their labour activities from remote locations' (Nilles, 1998, Sullivan, 2003, Martinez-Sanchez, 2007; page 208). According to Kurland and Bailey (1999) teleworking can be regarded as a form of flexible work that has received a lot of attention because of the impact on organizations, employees and society to work anywhere and anytime. Cooper and Kurland (2002) confirmed the importance of computer-based technologies because it makes telecommuting possible.

Kurland and Bailey (1999) defined miscellaneous types of teleworking; home-based telecommuting, satellite offices, a neighbourhood work centre and mobile workers. The type, home-based telecommuting, falls in the scope of this research. The articles discussed in this theoretical framework are shown in table 6, with the definitions and the operationalization.

Author	Definitions	Operationalization
Hill et al., (2003)	Definition of telework; <i>'Any form of substitution of information technologies for work-related travel; moving the work to the workers instead of moving the workers to work' (page 221)</i>	- Measures of work - Job performance - Job motivation - Career opportunity - Measures on personal/family life - Work-life balance - Personal-family level
Golden & Veiga (2005)	Definition of telecommuting; <i>'Periodic work out of the principal office, one or more days per week either at home, a client's site, or in a telework center' (Nilles, 1998, p.1)</i>	- Job satisfaction
Baruch (2000)	Definition of telework; <i>'Teleworking is working from home' (page 34)</i>	- Role outcomes - Changed attitudes and satisfaction, felt stress and performance

Table 6: Definitions of working at home and the operationalization

Taking all the definitions into consideration; *'teleworking and working at home are terms which can be interchanged, and involve periodic working at the principal office one or more day's a week, either at home, a clients site or in a telework centre. By use of technology employees move the work to them instead of moving to the work'.*

### 2.4.1 Working at home and expected benefits

During this research, the article of Hill et al., (2003) was the start and supported by other articles. The article of Hill et al., (2003) plays a central role because it directly combines the difference between the traditional office and the office at home. A lot of articles only describe those benefits that working at home could involve,

without comparison of the two items. Moreover, a difference is made between the influence of telework at work level and on personal/family level.

Much research has been conducted into the benefits of working at home, however different research has shown different results. Previous research has shown that teleworking increases productivity and job performance (DiMartino & Wirth, 1990; Kossek, 2001; Neal, Chapman, Ingersoll-Dayton & Emlen, 1993; Kurland & Bailey, 1999). With the emphasis on results, it is easy to find research which provides a link between teleworking and an increase of productivity, overall improvement in operating effectiveness (Kelly, 1988; Kraut, 1989) and less absenteeism. The review of the article of Kurland and Bailey (1999) also discussed that teleworking is related to improved productivity and higher job performance. Furthermore, the relationship between teleworking, motivation and job satisfaction was investigated. Telework increases both motivation and job satisfaction, it helps employees to improve commitment and morality (DiMartino & Wirth, 1990; Hill et al., 1998; Kelly, 1998; Kurland & Bailey, 1999; Neal et al., 1993). However, Kraut (1989) came to the conclusion that job satisfaction did not differ between working at the office and teleworking. Moreover, leaders and managers are often sceptical against telework, because the face-time culture differs from a result-oriented culture (Hill & Weiner, 2003). The move from traditional offices to working at home could provide costs as well as benefits (Shin et al., 1999).

The influence of teleworking on personal/family life shows in general, a positive view for the family. Although, according to Kossek (2001) it becomes more difficult for employees to separate between family and work, which results in more overload and stress (Duxbury, Higgins & Thomas, 1996). Hill et al., (2003) discussed in the article the difference between workers in traditional and home offices, based on the conditions of work; job performance, job motivation, and career opportunity, and measures on personal/family life; work-life balance and personal-family success. Moreover, the effect of the individual work venue is also studied in this article, in which the same outcome variables are measured.

The second expectation is based on the article of Golden and Veiga (2005). Bailey and Kurland (2002) concluded in their article that the relation between teleworking and job satisfaction is not clear. On one hand researchers came to the conclusion that telecommuting has a positive impact on job satisfaction (e.g. Dubrin, 1991; Norman, Collins, Conner, Martin, & Rance; Belanger, 1999). This conclusion is based on the argument that employees have the possibility to manage their work, based on their own needs (Baltes, Briggs, Huff, Wright & Neuman, 1999). Telecommuters are able to better combine work and the family-life. Therefore the work-family conflict is reduced and job satisfaction enhanced (Golden & Veiga, 2005).

On other hand, some researchers are not that positive, and they think that the positive benefits are subordinated, because of the negative feelings caused by social isolation (Cooper & Kurland, 2002). Employees are isolated from the office environment; they have less social interaction with colleagues and supervisors, which will negatively effect job satisfaction (Golden & Veige, 2005). Employees who telecommute do not have the opportunity to meet colleagues informally, or have face-to-face communication (Kurland & Cooper, 2002).

Golden and Veiga (2005) take a position in between, they expect the benefits of telecommuting to be curvilinear and have the shape of an inverted U.

Baruch (2002) also paid attention to the satisfaction of telecommuting. However, he also studied more outcomes such as stress and performance.

Author	Operationalization	Expected benefits
Hill et al., (2003)	<ul style="list-style-type: none"> <li>- Measures of work               <ul style="list-style-type: none"> <li>- Job performance</li> <li>- Job motivation</li> <li>- Career opportunity</li> </ul> </li> <li>- Measures on personal/family life               <ul style="list-style-type: none"> <li>- Work-life balance</li> <li>- Personal-family level</li> </ul> </li> </ul>	- Separation will be measured between working at the office and working at home
Golden & Veiga (2005)	- Job satisfaction	- The benefits of telecommuting have the form of an inverted U.
Baruch (2000)	<ul style="list-style-type: none"> <li>- Role outcomes               <ul style="list-style-type: none"> <li>- Changed attitudes and satisfaction,</li> <li>- felt stress and performance</li> </ul> </li> </ul>	- The role outcomes are increased when employees have to possibility to telework

Table 7: Operationalization of the term working at home and the expected benefits

### 2.4.2 Working at home and the significance of the benefits

After a statistical analysis, Hill et al., (2003) arrived at the following results, based on the benefits of working at home and at the traditional office. The first comparison is based on the differences between the traditional and the home office. In comparison to working at the traditional office, home office workers responded more positively on job motivation, work-life balance scales and the personal-family success.

The second expectation which Hill et al., (2003) studied considered the individual benefits on the basis of the type of venue. Working at home is a significant predictor of higher job motivation, improved work-life balance, and a higher success in personal/family life. The only relationship not significant was the career opportunity and the home office. Finally, based on working at the traditional office, only one relationship was significant, that of better job performance (Hill et al., 2003).

Golden and Veiga (2005) study in their research the basis on which the benefits of teleworking is founded. Golden and Veiga (2005) expect the benefits to have the form of an inverted U-shape. The statistical analysis has proved that this relationship is significant. The slope of the curve is upwards, then turns back and finally becomes slightly negative, when an employee works more than 15.1 hours at home.

The last relationship is based on the role outcomes in reference to the article of Baruch (2000). In their discussion Baruch (2000) stated that teleworkers reach a better performance due to less interruption, and teleworkers are more satisfied. Moreover, Baruch (2000) also characterised the employees who are able to telework. The most important characteristic is self-discipline, whereby inner motivation is of main importance.

### 2.5 Expected benefits of 'The New World of Work'

A lot of benefits were discussed during the elaboration of the different components of the NWW. Baane et al., (2010) suggested in their book that the benefits have an organisational advantage based on two options; first, the initiatives contribute to cost savings, and second they contribute to creation of value (Hamel & Prahalad, 1994). Hamel and Prahalad (1994) called it numerator and denominator management. Numerator management can be described as a strategy which is aimed at raising the revenues by means of the use of new market opportunities, anticipation of modified customer expectations and investing the required competencies.

Numerator management is often regarded as complex, because it requires discipline, vision and passion and it is difficult to predict which intervention leads to which result. Moreover, it is often regarded as the 'soft side' of the organization.

Hamel and Prahalad (1994) regarded denominator management as an efficiency strategy that is aimed at setting up the business at the lowest price possible. Cost reduction is used as an instrument to improve the

margins; however this instrument is temporarily effective. Under pressure of need, managers use cost reduction as an instrument. However, to arrive at structural growth, according to Hamel and Prahalad (1994), numerator management is more effective. Figure 2 shows how growth can be realised with numerator and denominator management

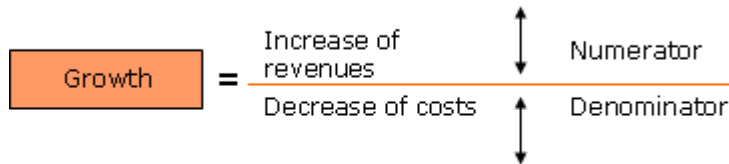


Figure 2: Growth based on numerator and denominator management (Baane et al., 2010)

The benefits described in the previous section can be linked to both types of management. Numerator management can be linked to job satisfaction, job performance, job motivation, productivity, work-life balance, and personal-family success. Baarne et al., (2010) also added the improvement of customer satisfaction. Many organizations are convinced that a higher employee satisfaction and commitment in the end leads to higher customer satisfaction (Baarne et al., 2010).

Denominator management is aimed at cost-reduction. The associated components are a decrease of absenteeism and of course cost-reduction itself. Baane et al., (2010) also regarded savings on travel costs and savings on housing costs as components of denominator management.

## 2.6 Virtual dimension

In the previous sections the benefits are described as resulting after implementation of; flexibility, virtual teams and working at home. However, to be able to work in this new way, investments and/or costs have to be made. Achmea has divided these investments into two dimensions; virtual and physical. Both dimensions and the associated sub components will be discussed below.

The virtual dimension is mainly involved with information and communication technologies (abbreviated ICT). According to Bijl (2009) ICT plays a very important role within the NWW. ICT is regarded as the catalyst of NWW. Due to the developments in ICT during the last five to ten years, it has become technically and financially possible to work time- and place independent. In the definition of NWW (see page 15) working time- and place independent forms the core of the definition, and ICT technology is regarded as the critical success factor. The collective name for all developments and applications is Web 2.0. This delivered a new dimension to working together, networking and knowledge sharing (Bijl, 2009).

On the other hand ICT is not more than a catalyst. The availability of the technology does not automatically lead to NWW, though the way the technology is used provides the value of the technology. The synergy and connectivity are the important dimensions.

Actually, what does NWW require from ICT? Based on the definition, the human being is the focus, facilitated by ICT to work more efficiently and effectively. ICT disconnects the human being from his workplace and the standard working hours, and enables the employee to work time- and place independent.

Twynstra Gudde (2010) is not quite on the same line as Bijl (2009). Twynstra Gudde regards ICT facilities as more important than the work environment. The office workplace still remains important, for hosting the data-

and telecom provisions and as the function for a meeting place for persons and organizations. However, the virtual component is of main importance according to Twynstra Gudde (2010). The main issue is based on the network capacity, quality, uniformity and standardization of the software, knowledge of using the software, telework conditions and document savings (Twynstra Gudde 2010). It is the responsibility of facility management to extend services for working at home and on the way. In addition, facility management is more important in the context of technological knowledge about the communication channels and media.

Vos and Van der Voordt (2001) operationalized in their article the ICT facilities in two components. To be able to work time and place independent, organizations need advanced information and communication technology (ICT) such as laptops, mobile phones, intranet and internet. Moreover, working at distance - which could be working at the client, at home or on the way - requires the connection of software systems. To be able to connect a computer or laptop to the company network, employees need a token, a wireless network connection, see table 8 (page 30) for the cost centres of the virtual dimension.

## 2.7 Physical dimension

The physical dimension mainly involves the working environment. To shape the working environment to NWW, investments have to be made. Van der Voordt (2004) replaced the word 'costs' with 'sacrifices'. Sacrifices are needed to introduce, use and maintain flexible workplaces. These sacrifices finally result in benefits, and are considered as yields, in the narrow sense as cost savings (denominator management), but in a broader sense it includes all possible benefits (numerator management) such as more satisfaction and productivity.

A survey of the current literature on workplace innovation discloses that a lot has been written regarding this topic, and predominantly about the benefits (e.g. Balkin et al., 2001; Beard et al., 2000; Becker and Steele, 1994; Duffy and Powell, 1996). However a comprehensive overview regarding the costs and benefits is lacking.

Before the sacrifices are studied, the needs for the physical dimension are of interest; firstly the term 'workplace innovation' will be explained. Organizations have chosen to change the accommodation, ICT and other facilities (Vos and Van der Voordt (2001). Vos and Van der Voordt (2001) called these developments 'workplace innovations'. Vos and Van der Voordt (2001) studied in their research the effects of innovation on the working environment. They studied the current developments in work environment, a few examples;

- Organizations set up more virtual teams
- Work processes will be redesigned
- Employees work at a place that fits them best

These developments have an impact on the work environment (Vos & Van der Voordt, 2001). For example, these employees have the possibility to work where they want, which means that employees make less use of workplaces and therefore the workplace occupation rate drops. To deal efficiently with the facilities and the space requires sharing of workplaces (Vos & Van der Voordt, 2001). The office takes on the function of a meeting place, which requires a more open space. Twynstra Gudde (2010) confirmed this new function of the office as well. Moreover, desk rotation and shared workplaces has been introduced as a possibility to reduce costs through more efficient use (Ornstein et al., 2001). It was supposed that employees can work more effectively and efficiently by allowing them to choose a variety of workplaces, such as cockpits for concentrated work, meeting places for formal meetings and other places for formal contact (Van der Voordt, 2003).

The term 'workplace innovation' is operationalized in a few components; a) to transfer the office environment in two different types of workplaces: 1) an open office which has the function of a meeting place and 2) a closed office where individuals or small groups can work in full concentration. b) The second component is flexi-

working, which involves a shared workplace, interchangeable workplaces and activity-related workplaces. And c), workplace innovation involves ergonomical furniture to allow adjustment of worktops and chairs. The three discussed components involve the need of sacrifices for the implementation of changes in facilities. Table 8 shows the facilities which have to be implemented and the benefits according to Van der Voordt (2003).

Twynstra Gudde (2010) stated that in a qualitative sense, the new workplace concept should lead to more intensively meetings, working together and sharing knowledge. Finally, it should lead to the described benefits such as higher productivity, employee satisfaction, cost savings and the improved image of the organization on the labour market. A relationship exists between the quality of the work environment and employee satisfaction, however some nuance is required. The quality of the work environment has less influence on the employee satisfaction than, for example the psychosocial factors (Batenburg and Van der Voort, 2008).

Yap (1996) identified in his article four categories of costs; 1) start-up costs, 2) capital costs, 3) operate costs and 4) management costs. The start-up costs are needed in the preparation phase when activities are necessary for the start up, evaluation of pilot schemes and to provide training (Yap, 1996). In some cases, a redesign of the job is also necessary. The start-up costs involve time and costs to carry out these activities (Yap, 1996). Capital costs are necessary for the telecommuting technology. This technology involves a range of basic, or an extensive set, of data resources such as computer terminals, messaging systems, photocopiers and modems (Yap, 1996). Equipment costs can vary, depending on the quantity and quality of the technology. The third type of costs is the operating costs, which include the costs for maintenance of the equipment and the peripherals. The last type of costs is the management costs. These costs are based on training of the managers in managing the result instead of the output. Managers have to get used to this new leadership style which requires costs (Yap, 1996).

Yap (1996) has also identified three categories of benefits resulting from the implementation of NWW. The first is savings on overhead, which involves savings in office space and overheads due to less office space. This is possible when employees can share a workplace and less workplaces are required. The second benefit involves productivity gains. Yap (1996) quoted several researchers in his articles who proved a positive relationship between NWW and productivity benefits. The third and last benefit is based on the travelling costs, which are reduced when a significant number of employees work at home. See table 8 for the cost centres of the physical dimension.

Area of interest / Cost – Benefit analysis	Costs	Benefits
Physical	<ul style="list-style-type: none"> <li>- Finishing and design (ergonomically sound furniture; face lifted dividing walls, floors and ceilings; coffee corners and seating).</li> <li>- The costs of renting and furnishing external working areas (e.g. teleworking areas, home working areas, and flex areas in a hotel or satellite office).</li> <li>- Renovation costs</li> <li>- Implementation costs of advisors, holding meetings and workshops, setting up pilot projects with provisional layouts, product development, training.</li> </ul>	<ul style="list-style-type: none"> <li>- Less building material.</li> <li>- Lower internal removal costs because of the more flexible office design.</li> <li>- Fewer square metres of floor space (m2).</li> <li>- Lower rent or lower depreciation costs.</li> <li>- Fewer working-area bases.</li> <li>- Lower travel costs because of teleworking.</li> </ul>
Virtual	<ul style="list-style-type: none"> <li>- Advanced ICT (mobile telephones, laptops, Internet, digital filing systems).</li> <li>- Additional office management, e.g. for reserving working areas or the maintenance of central and digital archives.</li> <li>- Adaptation of existing installations.</li> </ul>	<ul style="list-style-type: none"> <li>- Lower energy and maintenance costs.</li> </ul>

Table 8: The cost centres and their costs and benefits (Van der Voordt, 2004;Yap, 1996)

The first part of this theoretical framework involved the *hard side* of NWW. The hard side of NWW is predominantly based on cost centres on the virtual and physical dimension. Both dimensions are shown in figure 3;

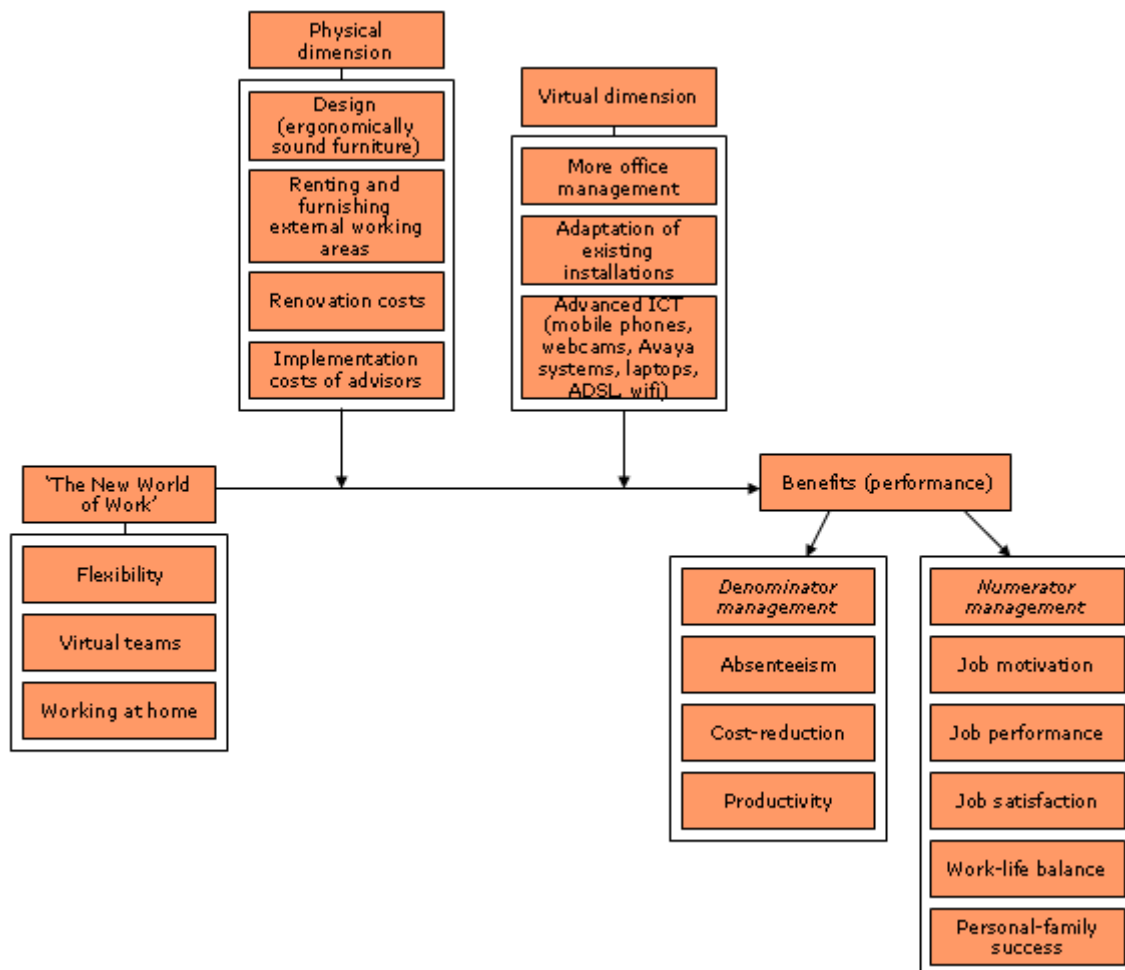


Figure 3: Operationalization of the physical and virtual dimension

## 2.8 Mental dimension

During the first part of this theoretical framework, the relationship between NWW and the benefits is described. However, before the organization is able to profit from the benefits, the NWW involves a lot of changes, especially on the mental dimension.

The mentioned dimension can be regarded as moderator variable and will be discussed in the second part of this theoretical framework. The mental dimension involves the components; trust, social cohesion and result-oriented leadership. The aim of discussing these components is to elaborate which role they play in the concept NWW. This leads to the following research question;

*'What kinds of effect do the components trust, social cohesion and result-oriented leadership have on the relationship between 'The New World of Work' and the benefits?'*

### 2.8.1 Trust

Trust is explained and related to many research fields, including management, psychology, economics and sociology (Colquitt et al., 2007; Das & Teng, 2001). Consequently, it is not surprising to note that these

different fields arrived at different definitions of trust (Mayer et al., 1995; Colquitt et al., 2007). Researchers disagree on the nature and definition of this often studied and complex concept (see e.g. Blomqvist, 1997; Hosmer, 1995; Rousseau, Sitkin, Burt & Camerer, 1998). According to Zaheer et al., (1998) defining trust is difficult for two reasons; firstly, trust has been applied to many different units of analysis and secondly, trust is regarded as a multifaceted and complex concept.

Zaheer et al., (1998, page 143) defined trust 'as the expectation that an actor (1) can rely on to fulfil obligations (Anderson & Weitz, 1989) (2) will behave in a predictable way, and (3) will act and negotiate fairly when the possibility for opportunism is present' (Anderson & Narus, 1990, Bromiley & Cummings, 1995).

After studying a number of definitions, trust has two common parts which are present in most of the definitions; the positive expectations of the trustee and the acceptance of vulnerability of the trustor (Mayer et al, 1995; Rousseau et al., 1998; Bijlsma-Frankema & Costa, 2005). According to Dirks (1999) the most commonly used definition of trust comes from Mayer et al., (1995) and is as follows '*a willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to trust, irrespective of the ability to monitor or control that party*' (page 4). This definition will also be used in this research.

### **2.8.2 Different types of trust**

In the actual literature trust is defined in different forms. Morris and Mobert (1994) have made the distinction between personal and impersonal trust. Where personal trust is based on the interaction between persons, impersonal trust is based on ranks, titles or positions. To study trust better on an organizational level, research has categorized trust as interpersonal trust and organizational trust (Ford, 2003; Bijlsma-Frankema & Costa, 2005). Interpersonal trust involves the level of trust between persons and trust on an organizational level -also called institutional trust – which refers to the level of trust related to the function of the organizations. The interpersonal level of trust is in the scope of this research and will be further elaborated. This research was conducted at division level and not on organizational level and therefore institutional trust is not interesting for this research.

In the meta-analysis of Dirks and Ferrin (2002) interpersonal trust is further categorized in two different dimensions, 1) affective and 2) cognitive and this distinction is based on McAllister (1995). The affective dimension involves 'reflecting a special relationship with the referent that may cause the referent to demonstrate concern about one's welfare' (Dirks & Ferrin, 2002, page 15). The cognitive dimension involves 'we choose whom we will trust in which respects and under what circumstances, and we base the choice on what we take to be 'good reasons, constituting evidence of trustworthiness' (Lewis & Wieger, 1985; page 970 and McAllister, 1995; page 26).

McAllister (1995) has operationalized the affective and cognitive dimension according to the following dimensions; integrity, honesty, reliability and fairness of the referent. However, according to Barber (1983); Cook & Wall (1980); and Shapiro (1990), the measures of trust are competence and responsibility. In this research trust will be operationalized according to the mentioned dimensions; honesty, reliability, integrity and fairness. In the scientific literature, the separation between the affective and cognitive dimension is the most common.

However, the operationalization will be bilateral, because trust can take place between colleagues and trust in managers/supervisors (Fox, 1974; Cook and Wall, 1980; McCauley and Kuhnert, 1992). During this research trust will be expressed as; trust in managers and trust in peers. This separation is necessary because an employee might trust his/her peers, but not trust his/her manager or the other way around (McCauley &



Kuhnert, 1992). To make this separation, this research tries to get insight in the level of hierarchical and vertical trust based on the dimensions of competence, reliability, integrity and fairness.

### **2.8.3 Interpersonal trust in 'The New World of Work'**

In the actual literature, interpersonal trust is often associated with the benefits of the NWW. However, because of the lack of control when working time and place independent, trust becomes more important between colleagues and between manager and employees. Employees and managers have less possibility to contact and they do not meet each other everyday. Therefore more emphasis will be placed on trust. Employees and managers have to trust each other, so they can rely on everyone and conduct his or her work in the best possible way. The responsibility is more on the shoulders of the employee instead of the shoulders of the manager; the employee becomes the designer of his own work and will be managed on output.

Dirks and Ferrin (2002) conducted a meta-analysis based on trust in leadership. According to Dirks and Ferrin (2002), researchers are interested in trust because they believe that trust has a significant impact on organizational outcomes. Mayer and Gavin (1999) expected that if employees have the feeling that their leader or supervisor cannot be trusted, a lot of energy is drained towards wrong feelings, showing a result in their work performance.

Moreover, trust is also linked to several attitudinal outcomes, such as job satisfaction and commitment. Rich (1997) emphasizes the importance of the duties a manager has to conduct, which have a major effect on the job satisfaction.

In contradiction, a low level of trust in the manager has a psychological affect if the manager has power over job related aspects; it also has an influence on the attitude towards the workplace (Dirks & Ferrin, 2002).

Dirks and Ferrin (2002) suggested two additional variables which are important for leadership: 1) Commitment and 2) Accuracy of information provided by the manager. If the manager manages remotely, these aspects become more important, employees have to trust their managers.

In the previously proposed relationship, trust is based on the manager. However, trust among colleagues is also important when working time and place independent is implemented. When a low level of trust between colleagues exists, a lot of time resources and energy will be lost (Schmidt & Posner, 1982). In contraction, when a high level of trust exists, colleagues are more satisfied and motivated because they can rely on their colleagues. In the case of Achmea, this is of importance because colleagues work at different locations. If they do not meet each other every day, the relationship is remote.

On top of the expected relationship of trust in management, trust in peers and non-financial benefits, trust can also have an affect on financial benefits. According to Dirks (1999) a high level of trust has a positive influence on the number of control mechanisms, such as rules and monitoring. Furthermore, Zaheer et al., (1998) discussed in their article that a high level of trust reduces the negotiation costs, as time and effort to tune tasks on employees or on employees and managers.

With a high level of trust, agreements are reached easily and quickly. 'Meeting of the minds' will be reached easier when the level of trust is high. It mitigates the information asymmetries because information can be shared honestly and openly (Zaheer et al., 1998).

### **2.8.4 Result-oriented leadership**

In recent years, leadership development has taken a more important impact (Day, 2000; McCauley & Van Velsor, 2004; Murphy & Riggio, 2003; Pearce, Waldman & Csikszentmihalyi, 2006). Based on a report of the Gartner Group, published in 2008, 41 million corporate employees worldwide are telecommuting one day a week. One of the reasons of this trend is based on NWW. This trend is not only applied to employees who

require a change in their jobs, it also requires adaptations from their managers (Lautsch & Kossek, 2011). Managers have to interpret, implement new policies regarding this type of work, and have to adapt to it.

Moreover, the main change for managers is probably remote management instead of physical management. Inextricably linked with remote management is management on results instead of management on the process. Due to the fact that employees are able to work at home, physical contact and informal contact is reduced and therefore managers have to manage on results instead of presence.

### **2.8.5 Result-oriented leadership in 'The New World of Work'**

According to Lautsch and Kossek (2011) the growth of telecommuting is driven by the benefits that arise after implementation. The benefits are extensively discussed in this theoretical framework. To refer briefly to the meta-analysis of Golden et al., (2007), telecommuting enhances inter alia employee performance. Moreover, the employee perspective has shown more positive relationships. According to Lautsch and Kossek (2011) it is possible to reach these benefits after effective implementation arrangements supported by the supervisors. The formal role of telecommuting policies is not enough to reduce for example, work-family conflicts. Many organizations have already realized it is difficult to achieve these benefits without the help of the manager. Examples exist of organizations that trained their supervisors to best manage a telecommuting work environment. According to Lautsch and Kossek (2011) it is also important to create a culture of inclusivity. A key factor in the creation of such a culture is; 'ensuring that supervisors assist workers in maintaining the performance in their teams when they take advantage of telecommuting' (Lautsch & Kossek, 2011; page 11). Five issues are important to be an effective supervisor in the new work style; 1) monitoring, 2) social integration, 3) gate-keeping, 4) work-life boundary management and 5) manage your own work (Baane et al., 2010).

The first issue is monitoring. Managers are inclined to manage telecommuters differently because they are not physically present. However, according to the study of Lautsch and Kossek (2011) successful managers manage telecommuters and non-telecommuters the same way. Teleworkers have a feeling of exclusion when they are treated differently. This is also the other way around. Providing the same style and feedback (based on results) is required.

The second issue involves social integration. It is important to contact teleworkers frequently and have quality contact. In this way, it is possible to create a 'shared group' feeling. Moreover, social isolation will be prevented when the frequency of contact moments rises.

The third component involves gatekeeping. The first important question in this process is which employees are able to work at home? Lautsch and Kossek (2011) have defined three types of factors which can be taken into consideration, deciding which employees are able to work at home and which not; factor 1) work-related considerations, aimed at suitability, factor 2) technological limitations, based on barriers which make it technological impossible to work at home, and factor 3) personal and household characteristics. Personal characteristics are addressed to the ability of the employee to work independently and household characteristics are based on distractions.

The fourth issue involves work-life boundary management, based on the separation between family and work. According to Lautsch and Kossek (2011) family and work should not intermingle. A formal policy with rules regarding working at home is desirable. Working at home should not be a reason to also look after the children. Therefore a separation is required. Managers who treat teleworkers and non-teleworkers the same and who encourage teleworkers to separate private and work life will be more successful. Success can be regarded as improved employee satisfaction.

The last issue involves 'manage your own work'. Between the lines, it can be noted that in the NWW, the responsibility moves from the manager to the employee. 'Manage your own work' is one of the principles which Baane et al., (2010) described in their book *'Het Nieuwe Werken Ontrafeld'*. This principle is based on managing on output. The employee or the team is considered to self-employ results, without interference from the manager. Baane et al., (2010) described in their book an example of a company (Interpolis) that submitted a new philosophy to the managers *checking the employees to trust the employees*. Both manager and employee can make regulations about the extent of autonomy the employee gets. It can be different for each employee. According to Baane et al., (2010) this is customized in consultation between manager and employee. But it is still the task of the manager to create connection among the employees. It is important that the manager creates social cohesion. Due to the fact that face-to-face contact is decreasing, getting insight in the new work styles and mutual communication is of crucial interest (Baane et al., 2010).

### **2.8.6 Social cohesion**

Emile Durkheim was the first sociologist who used the term social cohesion. Durkheim regarded social cohesion as an ordering feature of the society and he defined the term as 'the interdependence between members of the society, shared loyalties and solidarity' (Berger-Schmitt, 2000; page, 2). Friedkin (2004) described in his article that due to the increased attention paid to social cohesion, a proliferation of definitions has arisen.

Shaw (1981) has defined social cohesion 'as the degree to which members of the group are attracted to each other' (Webber & Donahue, 2001; page 146). However, Cartwright (1968) defined team cohesion as the desire of a team member to be part of the team. Several forces thereby play part in the personal desire to remain on a team (Hoegl & Gemünden, 2001). Mullen and Copper (1994) have made a meta-analysis and they distinguished three forces of cohesion; 1) commitment to the team task, 2) group pride spirit and 3) interpersonal attraction of team members, (Hoegl & Gemünden, 2001).

Hoegl and Gemünden researched team work quality (TWQ) and the effect success of innovative projects. One of facets of team work quality is social cohesion; the other five facets are communication, coordination, balance member contributions, mutual support and effort. However, only social cohesion is of interest for this research. Hoegl and Gemünden (2001) state that an adequate level of team work quality could not be achieved without cohesion. 'If team members lack a sense of togetherness and belonging, if there is little desire to keep the team going, then intensive collaboration seems unlikely' (Hoegl & Gemünden, 2001).

However, to go back to defining social cohesion, the definitions of Shaw (1981) and Cartwright (1968) will be taken together, and the definition of social cohesion during this research defined as follows;

*'Social cohesion constitutes a sense of belonging to a social group or a workplace, whereby the members of the group are attracted to each other'.*

According to Berger-Schmitt (2000) it is possible to measure social cohesion on two levels; individual and group level. Group level involves the common values, behaviours and identities. On individual level cohesion is regarded as belonging, inclusion, recognition, participation and legitimacy (Berger-Schmitt, 2000).

### **2.8.7 Social cohesion in 'The New World of Work'**

Although there are previously discussed advantages to working at home, it involves two important challenges; the managers' resistance to manage employees without psychically observing them (see section 2.8.5 *Result-oriented leadership in 'The New World of Work'*) and the employees' concern about isolation (e.g., Shamir & Salomon, 1985; Tomaskovic-Devey & Risman, 1993).

According to Kurland and Cooper (2002) two different types of isolation can take place; professional and social. Professional isolation is based on *to be out of sight/ to be out of the minds*, for organizational rewards and promotions. Social isolation means the informal interaction between colleagues.

Telecommuters always experience a kind of professional isolation when they are physically separated from the traditional workplace. Isolation is a much expressed concern regarding the new labour relations (Kurland & Cooper, 2002).

The dimension of belonging to a group or being part of a group is very important for the human being. Maslow (1943) developed a pyramid in which he ranked human needs, see figure 4. Bijl (2009) made a separation within this pyramid and described in his book that the first two layers are satisfaction due to work. The last two layers (self-actualisation and esteem) will be fulfilled through the job. The level 'belonging' is regarded as important for private life and work life.



Figure 4: The Maslow pyramid (1943)

In the previous explanation, social cohesion is often regarded with telecommuting. Indeed, social cohesion is important in the context of virtual teams. In this context, social cohesiveness can be regarded as the members' attraction to tasks and its team (Kozlowski & Bell, 2003).

According to Peters et al., (2010) social cohesion is one of the success factors of modern organizations to ensure that the employees experience more commitment to the organization (Duyvendak & Veldboer, 2001).

Social cohesion is positively linked with employee satisfaction and other psychological factors. One of the researchers who positively linked social cohesion with higher satisfaction is Chidambaram (1996). Other factors can be related to the research of Lurey and Raisinghani (2001); Maznevski and Chudoba (2001) who proved that cohesiveness is related to a better performance outcome.

## 2.9 Control variable: type of work

The last moderator variable in the theoretical model involves the control variables which is the type of employee and the locations of the Pension & Life division.

Achmea has distinguished three types of work. The first one involves knowledge workers, and their proceedings are aimed at collecting, processing and publishing of information. Moreover, working together with other colleagues and communicating is of main importance. The knowledge worker is mobile within the organization and examples are; HR, control and marketing (Achmea documentation).

The second type of employee involves the production worker. The main characteristic of the production worker is the proceeding that is repetitive in nature. The work environment is furnished on the basis of production. Moreover, production workers need a high level of support and in general the mobility is limited (Achmea documentation).

The third and last category of workers involves the mobile workers and they can be characterized on the basis of travelling. The mobile worker is in most of the cases, en route and therefore their mobility level is high. The mobile worker works in most of the cases outside an Achmea location at every possible position (Achmea documentation).

Baltes et al., (1999) used the type of employee as a moderating variable in their research. Baltes et al., (1999) have researched the effects of alternative work schedules on the type of employee. The researchers stated that managers are less influenced by interventions than administrative workers. In general, it can be considered

that managers are knowledge workers. Baltes et al., (1999) declare this assumption due to the fact that managers already have more freedom and autonomy in their schedule than for example production workers. Moreover, considering that the function of manager already meets the need for autonomy, the introduction of a flexible schedule will not have a positive influence on their satisfaction. Baltes et al., (1999) expected professionals and managers to be less affected by the implementation of a flexible work schedule. The expectation has been statistically tested and indeed, the professionals and managers were not affected by the implementation of flexible work schedules, in contradiction with the employees who were affected on the basis of satisfaction.

A national research regarding commissioned by Kluwer (2011) proved that NWW is predominantly for management and knowledge workers (specialists). A gap is visible in comparison with other parts of the organization and in particular with supportive employees. The higher educated employees are leaders regarding NWW due to the fact that their function involves more autonomy and freedom. On this point, the national research and the research of Baltes et al., (1999) agree. However, one of the conclusions of the national research is the conviction that other employees could also profit from the NWW.

The second part of this theoretical framework involved the *soft side* of NWW. The soft side of NWW is predominantly based on the mental dimension, see figure 5.

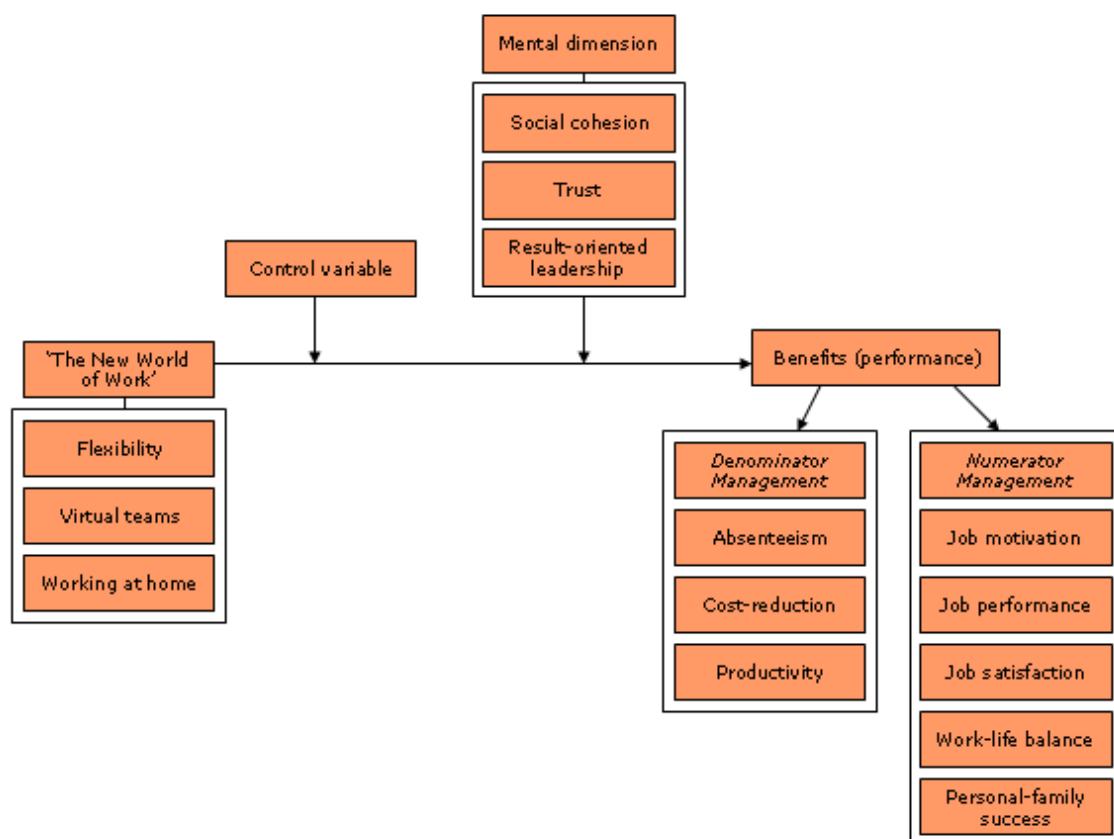


Figure 5: Operationalization of the mental dimension

### 2.10 Cost and Benefits of 'The New World of Work'

This theoretical framework discusses the NWW and the involved components, flexibility, virtual teams and working at home. The concept NWW leads to benefits and can be divided into denominator and numerator management (Baane et al., 2010).

The physical, virtual and mental dimension are taken into account and threaded as moderating variables. Using the discussed theories, the theoretical model of the section 1.4.1 *Scientific objective* is elaborated with the results shown in figure 6.

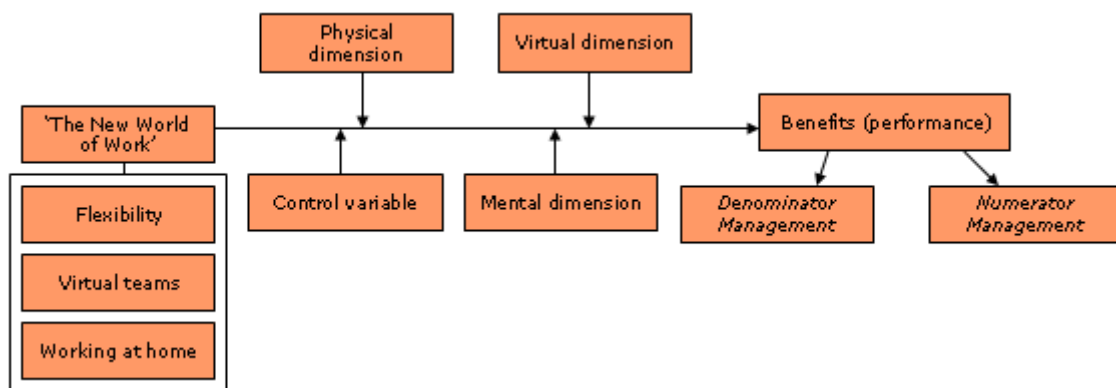


Figure 6: The research model based on the theoretical framework

### 3. Methodology

This chapter involves the methodological part of this research. The aim of the methodological part is to elaborate the research methods in order to fulfil the research objective. The research objective is described in section 1.4 and repeated in brief; assessing the current status of the mental, physical and virtual dimension in order to determine the extent to which the division could profit from the benefits of NWW.

#### 3.1 Research approach

Research can be divided in two types; theory research and practice-driven research. This type of research fits within the last category, and practice-driven research can be further divided into 1) problem analysis, 2) diagnostic research, 3) design oriented research, 4) change oriented research, and 5) evaluation research<sup>4</sup>.

The characteristic of diagnostic research is 'starting from a probable problem' (Slide 15, Master class 09/2011). The diagnostic research comes into expression in this research due to researching the preconditions under which the benefits arise.

It has already been mentioned that the Tilburg location works according to the principles of NWW (Vos and van der Voordt, 2001). In chapter 2 *Theoretical Framework* was extensively discussed, how NWW leads to benefits. The diagnostic part tested whether the same relationship holds for the Tilburg location.

In addition, the part also tests whether the components; trust, social cohesion and result-oriented leadership moderate the relationship between NWW and performance.

#### 3.2 Methodology in relation to the sub questions

The first research question involves; *what costs and benefits arise on the virtual and physical dimension after implementing 'The New World of Work?'* and this research question will be predominantly answered with a literature study. In addition, the literature study also describes the cost centres of the virtual and physical dimension. Scientific literature in combination with available Achmea literature is used. Both types of literature are used to come to an extensive literature framework and a research model.

The research model which is the result of the first sub question is discussed during interviews. It is important to discuss and consult with employees from different locations. The aim was to discuss their views, understand what they mean, and ask whether they have further recommendations. Based on the interviews, a conclusion is drawn which answers the question; are the costs centres based on the virtual and physical dimension comprehensive and applicable for the Pension & Life division?

The second research question involves; *what effects do the components trust, social cohesion and result-oriented leadership have in the relationship between 'The New World of Work' and the benefits?* This research question is partly answered with scientific literature. In addition to the literature, a questionnaire was posted among all employees of the Pension & Life division. The way in which the questionnaire was diffused, the sample size and the origin of the questions is discussed in the following sections.

The results of the questionnaire give an indication of the mental dimension. Are the employees of the different locations able to work according to NWW? Or should interventions take place to improve, for example trust or result-oriented leadership?

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<sup>4</sup> The classification of the practice driven research is based on the presentation of the Masterclass HRM 09/2011

The last and third sub question; *based on sub question 1 and 2, what advice can be given to the management of the Pension & Life division?*

The last sub question can be considered as the integration of the first and second sub question. A comprehensive advice based on the costs and benefits will be given.

### **3.3 Qualitative research**

Section 3.2 *Methodology in relation to the sub questions* explained that a research model is arisen after the theoretical framework (figure 3 and 5). However, this model is based on theory and should be tested in order to make it applicable for Achmea. The virtual and physical dimensions were predominantly tested with the use of qualitative research.

A method which is useful in this context is the interview (Babbie, 2004), in which observations (see section 3.4) are a passive method of inquiry. An interview is a form of active inquiry. According to Babbie (2004) both methods of inquiry go together.

Babbie (2004) defined a qualitative interview as 'an interaction between an interviewer and a respondent in which the interviewer has a general plan of inquiry but not a set of specific questions that have to be asked with particular words and in a particular order' (page 300). For this method, it is essential that the interviewer forces the conversation in a certain direction and highlights some specific topics. The questions asked during the interviews can be found in appendix 8.2; The interview protocol. All the questions are open ended, which gives the interviewees the possibility to provide his/her own answers. In most of the cases qualitative in-depth interviews rely on open-ended questions (Babbie, 2004).

Like all research methods, qualitative field research has strengths and weaknesses. An advantage of this method is the in-dept examination, in contradiction to other methods which are sometimes superficial. Another advantage is the flexibility, when a respondent comes up with an answer which requires further questions the researcher is allowed to ask them. This type of interview is called semi-structured interviewing.

On the other hand, qualitative research has disadvantages as well. The first disadvantage is the possible bias. Shadish et al. (2002) defined bias as 'a systematic error in an estimate or an inference' (page 505). To give an example, during the interview it could be possible that the interpretation of answers is led by the opinion or experiences of the interviewer (Babbie, 2004). Moreover, validity and reliability are both qualities of measurement. Especially, reliability is a matter of dependence and when the inquiry is done over and over again, the question is; are the results the same? The validity and reliability issues will be discussed later in this chapter.

The interviews were conducted in meeting rooms and the approximate duration of the interviews was 33 minutes.

### **3.4 Participant observation**

The research activities conducted for this thesis were done in parallel with an internship. During the internship the researcher was part of the HR-team of the Pension & Life division. The internship period covered a half year, and during this period several additional activities were conducted.

One of these activities was participation in the core team of 'The Speed of Trust', a workshop which was developed around one of Achmea's objectives to be the most trusted insurer. A contribution was made to the development of this workshop and also to its implementation. The workshop was sometimes given by me.



Furthermore, due to my participation in the workshop and being part of the HR-team, the researcher had access to a lot of information, presentations, documents, meetings and team days.

This method is called participant observation, whereby the aim is to gain an intimate and close familiarity with a given group of employees. The method is often called ethnography and Babbie (2004) has defined it as 'an approach to field research based on the assumption that an objective social reality exists and can be observed and reported accurately' (page 289). The change on a bias is relatively small due the fact that the observer is part of the group. Furthermore, it definitively helps in understanding the answers of the respondents better, due to the own experience as an employee of Achmea. Therefore, the context and some specific Achmea-codes were better understood.

### **3.5 Quantitative research**

Besides the use of qualitative research, quantitative research is also used in this thesis. The aim of the quantitative research is to get insight into the mental dimension and especially on the components; trust, result-oriented leadership and social cohesion, and involves sub-question two.

Quantitative research is always conducted with a questionnaire, whereby the definitions that are used in the theoretical framework are operationalized to a level whereby they can be measured. Appendix 8.2 contains the questionnaire whereby the first sixteen questions are based on working at home, thereafter the component flexibility is measured with three questions; social cohesion with six questions, result-oriented leadership with eight questions, virtual teams seven questions, and the last construct is trust which involves twenty-three questions. Section 3.7 *Measures*, elaborates in depth the choice for specific questions.

The questionnaire can be distributed via different research channels, to give some examples of channels; online, face-to-face, telephonic and by letter. This research used the online version and this distribution channel has advantages and disadvantages. Online research is a very quick way of doing research, and is also inexpensive. Moreover, the respondents have the time and freedom to fill in their questionnaire when it suits them and at their own pace. Furthermore, the researcher has the possibility to send the respondents a reminder, and the last advantage is that the researcher has a quick understanding of the results.

One disadvantage of online research is that the researcher cannot explain nor help the respondents with filling in the questionnaire. If some of the questions are not clear enough, the researcher cannot explain what is meant by a question. Furthermore, another disadvantage is that no insight is given in non-respondents.

The decision was taken to distribute the questionnaire online. Due to the large sample size, see section 3.8 *Sample*, it is a faster way of distributing the questionnaire. Moreover, the division has a program MWM2 which makes it possible to diffuse the questionnaire online. In addition, the employees are used to this program style because all the employees of the division engage in a survey on a yearly basis in which MWM2 is used.

The questionnaire was sent to the employees on 09-07-2012 and closed on 07-08-2012. The total length of the questionnaire was four weeks whereby the employees were given one reminder after two and a half week.

### **3.6 Levels of measurement**

Appendix 8.2 contains the questionnaire for this research. The questions can have different levels of measurement. Babbie (2004) has distinguished four levels of measurement; nominal, ordinal, ratio and interval. The nominal level of measurement involves categories which are dichotomous, categories without any sequence. Examples of questions with a nominal level of measurement are the first questions of the questionnaire, such as; gender, age, and questions regarding the frequency of working at home.

The ordinal level of measurement involves answer categories with a particular order. The majority of the questions involve answer possibilities which have an ordinal level of measurement.

The ratio and interval level of measurement is in most cases taken together. The main difference between the measurement levels is that the interval level has an absolute zero point. Questions can be found in the questionnaire that fall within the interval/ratio level of measurement. An example is the question regarding working years.

According to Babbie (2004) the ratio/interval level of measurement is the highest level, descending to the ordinal and nominal level. The level of measurement is important for the analysis techniques which will be described in the section *Data analysis*.

### 3.7 Measures

The questionnaire involves six variables which are; working at home, social cohesion, result-oriented leadership, virtual teams and trust. Most of the questions are based on earlier used datasets, which will be elaborated in this section.

*Working at home* is the first component of the questionnaire. The operationalization is a mix between existing questions and questions made by the researcher. It was decided to also add own questions because current literature lacks a comprehensive dataset. Moreover, due to the experience of the researcher, specific questions for Achmea were asked, for example, the question *'I have the feeling that I have to be available when working at home'*. This feeling prevails among employees and therefore a decision was taken to ask a question regarding this topic in the questionnaire.

However, the questions regarding concentration are based on the dataset of Vittersø et al. (2003). Three questions are based on the item concentration; *'it is easy to concentrate on my job tasks when I work at home'*. *'It is easy to become distracted when I work at home'*. *'There is a lot of noise at home'* (Vittersø et al. 2003, page 210). The answers of the items are based on a 5-point Likert-scale with  $\alpha = 0.86$ .

*Social cohesion* is the second component of the questionnaire. The questions within this component are all based on an existing dataset. Hoegl and Gemünden (2001) did research to team work quality and innovative projects. One of the components they researched was social cohesion. Questions regarding this component; *'There were many personal conflicts in our team'*. *'The members of our team felt proud to be part of the team'*. *'Every team member felt responsible for maintaining and protecting the team'*. *'Our team was sticking together'*. *'There was personal attraction between the members of our team'*. *'All members were fully integrated in our team'* (Hoegl & Gemünden, 2001; page 447). Hoegl and Gemünden (2001) have not specified the Cronbach's alpha for each component separately; however they have mentioned that all the coefficients lie between 0.72 and 0.97.

*Result-oriented leadership* is operationalized with the use of the article of Martins et al. (2004). The construct *result-oriented leadership* is operationalized with eight questions. Questions regarding this component; *'My supervisor and I have daily discussions about the results of my work'*. *'I make regular appointments with my supervisor about my results'*. *'My supervisor often corrects me on my work method'*.

*Virtual teams* are operationalized with the use of the article of Webster and Wong (2008). Webster and Wong have measured virtual teams on several components. The first one is group identity, which involves two questions; *'I feel strong ties with these team members'*. *'I feel part of this team'*, (Webster & Wong, 2008, page 48). The questions are originally from Jetten et al., (2000). Cronbach's alpha is 0.84 for remote members and 0.83 for local members. The second component is communication frequency, whereby the question is asked *'to which extent do you use these communication channels?'* The objective of this question is to calculate the communication frequency within virtual teams. The last component is based on trust within virtual teams and these questions are originally adopted from McAllister (1995). The theoretical framework elaborates that trust

can be categorized in two different dimensions 1) affective and 2) cognitive. These two dimensions are taken into account in the questionnaire. The question *'to what extent do you feel that the team members approach their job with professionalism and dedication'* is based on the affective dimension. The question *'we have a sharing relationship, we can all freely share our ideas, feelings and hopes'* is based on the cognitive dimension. Both questions can be found in the article of Webster and Wong (2008, page 48) and the overall reliability for both measures  $\alpha = 0.93$

*Interpersonal trust* is elaborated as trust between colleagues and trust between employees and their supervisor. The whole item is measured with the use of an existing dataset which is originally from Cook and Wall (1980). There are three reasons why the dataset of Cook and Wall (1980) was chosen, 1) the set is one of the first which measures interpersonal trust and is still one of the most used, 2) it measures both trust in colleagues and trust in supervisors and is therefore applicable for this research and 3) the dataset shows psychometric properties and has been extensively tested (Matzler & Renzl, 2007). Questions regarding trust in colleagues are; *'I can trust the people where I work with to lend me a hand when I need it'*. *'Most of my workmates can be relied upon to do as they say they will do'*.

Examples of questions regarding trust in management; *'Management at work seems to do an efficient job'*. *'I feel quite confident that the firm will always try to treat me fairly'*. Cronbach's alpha is 0.77 for trust in colleagues and 0.78 for trust in management.

*Individual performance* is measured with the use of the article of Staples et al. (1999) which was further developed by Ramirez and Nembhard (2004). Individual performance is based and measured on productivity. Predominantly, the extent to which an employee sees herself/himself is measured. The item involves six questions, a few examples; *'my working results generally meet all relevant requirements'*. *'Among my work group, I would rate my performance in the top quarter'* (Staples et al., 1999). The questions which are based on the article of Staples et al., (1999) have  $\alpha = 0.90$ .

*Flexibility* is the sixth and final component which is measured in this research. The questions regarding flexibility are based on the dataset of Shockley and Allen (2007). Shockley and Allen (2007) based their operationalization on Hyland (2000). Questions regarding flexibility are; *'I have the freedom to vary my work schedule'*. *'I have the freedom to work wherever is best for me – either at home or at work'*. Cronbach alpha for flexitime is 0.84 and for flex place is 0.91.

Finally, one control variable was added, which is important in statistical research. A control variable is used to explain the variation in the analysis. The control variables of this research are *type of employee* and *location*.

### 3.8 Sample

The total sample size involved 1129 employees, which means that all the employees of the Pension & Life division were part of the sample. However, the trainees and the external employees were not taken into account. The external employees fall outside the target group because a lot of them are employed on a project basis and their stay within Achmea is in most of the cases short-lived, and they are not officially employed by Achmea.

Table 9 gives an overview of the different locations, the number of employees and the percentage of which responded. The majority of the employees of the division work at the Apeldoorn PWA location. The minority work at the Amsterdam location, which is in line with the respondents.

Department	No. of employees	Responded	Percentage
Amsterdam	12	5	41,67%
Apeldoorn PWA	395	239	60,51%
Apeldoorn CBM	138	45	32,60%
Leeuwarden	291	128	43,98%
Tilburg	293	138	46,76%
Total	1129	555	
Overall response			49,16%

Table 9: Response rate per location

The respondents were 56,9% men and 43,1 % women. In comparison to the overall Dutch population (CBS, 2011), where the ratio is 49,5% men and 50,5 % women, a relatively large number of men participated in the questionnaire.

### 3.9 Data analysis of the qualitative analysis

This section discusses the analytical techniques of the different research methods. To start with the qualitative research method, the way in which data could be analyzed is through coding. According to Babbie (2004) coding is 'the process of transforming raw data into a standardized form' (page 318). Coding can be further specified in three different forms; open coding, axial coding and selective coding.

Coding is a very strict way to analyze interviews. The focus of this research is more on the quantitative part than on the qualitative part and therefore in this context 'coding' is too heavy. During this research coding will be replaced by assessing. An assessment will determine the interpretation and output of the interviews.

### 3.10 Data analysis of the quantitative analysis

The resultant data from the quantitative method is analyzed with the statistical program SPSS. The elaboration of the quantitative analysis is divided in three parts; 1) univariate analysis, 2) bivariate analysis and 3) the multivariate analysis. The univariate analysis is the simplest form of analysis. It is based on analyzing a single variable. Statistical tests which are used are the descriptive statistics. Examples of descriptive statistics are; mean, median, mode, minimum, maximum, standard deviation, skewness and kurtosis. The aim of the descriptive statistics is to analyze whether there is a normal distribution. A normal distribution contains a bell-shaped curve and the data is symmetrical. The rule of thumb is a quick scan to determine whether the spread follows the rules of the normal distribution. There are two rules 1) whether 68% of the data falls in one standard deviation and 2) whether 95% of the data falls in two standard deviations. Moreover, the kurtosis also gives an indication of whether the data is distributed normally, and the rule of thumb regarding the kurtosis is that the deviation is between -3 and 3.

The bivariate analysis involves two variables. This part of the analysis involves regressions to test whether NWW leads to a better performance. The regressions are tested twofold, 1) whether the relationship holds for the whole division, 2) whether the relationship holds for a specific location of the division. If the test is significant, the correlation of the relationship will be measured. The type of the test is dependent on the measurement scales which are ordinal. Therefore, Cramer's V is used to measure the correlation.

A multivariate analysis is based on tests with more than two variables. This part tests whether the separate variables of social cohesion, trust and result-oriented leadership lead to a better performance. Moreover the multivariate analysis tests whether the moderators have an effect on NWW and performance.

In addition to the regression tests, an Analysis of Variance (ANOVA) test was also part of the analysis. The ANOVA test is conducted with the aim to test whether a difference exists on the moderator variables per location. The precondition for the ANOVA test is the Levene's test. The Levene's test is conducted to test

whether the population meets the homogeneity requirements. If the population does not meet the homogeneity requirements, the alternative is a non-parametric test such as an independent T-test.

### 3.11 Reliability

According to Babbie (2004) reliability can be defined as 'the quality of a measurement method that suggests that the same data would have been collected each time in repeated observations of the same phenomenon' (page 141). However, reliability should not be confused with accuracy, reliability does not ensure accuracy. A method which ensures reliability is using established measures (Babbie, 2004). Section 3.7 *Measures* has already explained that the questions in the questionnaire are based on existing datasets. Therefore the Cronbach's alpha (which is a reliability coefficient) of these datasets can be regarded as good.

Cronbach's alpha is a coefficient which consists of six levels. The mentioned Cronbach's alpha of the used datasets lies between  $\alpha = 0.72$  and  $\alpha = 0.94$ . The alpha from  $0.80 > \alpha \geq 0.70$  is acceptable, between  $0.90 > \alpha \geq 0.80$  is good and  $\alpha \geq 0.90$  is excellent. Therefore, the overall Cronbach's alpha of this questionnaire is considered to be good.

In the case of the qualitative method, the subjectivity of the researcher can lead to some misinterpretation or misunderstanding of the interview answers. To prevent misinterpretation an interview protocol is used, the interviews were recorded so that the interviewer was able to replay them, and finally any ambiguities by the interviewees were clarified by asking for an explanation.

### 3.12 Validity

In 1975, Campbell was the first to define internal and external validity. Thereafter, in 1979 Cook and Campbell elaborated this typology further in four types of validity; internal validity, external validity, construct validity and statistical conclusion validity. According to Shadish et al., (2002), 'validity refers to the approximate truth of an inference. When something is regarded as valid, a judgment is made about the extent to which relevant evidence supports that inference as being true or correct' (page 34).

The four types of validity and their threats are elaborated in the following sections. Whereby a threat can be defined as 'a specific reason why a partly or completely wrong inferences is made about the covariance, causation, constructs or about whether the causal relationship holds over variations in persons, settings, treatments, and outcomes' (Shadish et al., 2002; page 39).

#### 3.12.1 Internal validity

The main question regarding the internal validity, is according to Shadish et al., (2002) 'reasons to think whether the relationship between A and B is not casual' (page 54). The case study is a method whereby a negative effect could arise regarding the internal validity. Therefore, during the research it was extra important to take this type of validity into account. An attempt was made to minimize the impact of the threats, however in some cases this was difficult to realize.

History is one of the threats to internal validity and is based on events which occur during the treatment and could have an effect on the observed outcome. As has already been described in the first chapter of this thesis, NWW entails much debate within Achmea's Pension & Life division. The division had a project group which was responsible for the implementation of the project. However, due to uncertainties and ambiguities, the project group now has the status of 'on hold'. Furthermore the Board of Directors had to divulge the new policy regarding working at home. This policy contains rules and fees for facilities at home. This divulgence was delayed until further notice due to the enterprise council. Due to these developments in the division, employees could have a certain perception on NWW and this could have an effect on the answers of the questionnaires.

### **3.12.2 External validity**

According to Shadish et al., (2002) external validity is based on generalization. This research is a business case, which means that it was conducted within and for the Pension & Life division. However, the theoretical framework ended with a cost and benefit model (see figure 5) which could be a starting point as well for other organizations. Moreover, a lot of researchers have conducted research to result-oriented leadership, social cohesion and trust and they proved that these components are important within the NWW. This research can therefore be generalized for other companies as well.

### **3.12.3 Statistical conclusion validity**

The statistical conclusion validity refers to drawing wrong inferences about the co-variation between two variables. This type of validity is more valid in the quantitative method than in the qualitative method. To reduce statistical conclusion validity some preventive measures could be taken. For example, the sample size is important, and when it is large enough the statistical conclusion validity is reduced. This research was conducted among all the employees of the division and can therefore be regarded as large (1129 employees). Moreover, another threat of statistical conclusion validity involves the reliability of the measures. It involves accurately measuring a variable. This threat is reduced with the use of existing datasets. Almost all questions in the questionnaire are based on previously used datasets which had a high Cronbach's alpha.

### **3.12.4 Construct validity**

The last validity type involves construct validity. It is predominantly based on measuring what was intended to be measured. In this research, the constructs that are intended to be measured are; flexibility, virtual teams and working at home, which together form the NWW. Thereby, the constructs of result-oriented leadership, social cohesion and trust form together the mental dimension.

Measuring the constructs is based on two different methods, 1) in the qualitative research method, questions were asked regarding the comprehensiveness of the cost centers and 2) in an extensive questionnaire in which the whole division took part, all of the constructs are measured.

## 4. Assessment of the costs and benefits model

The theoretical framework concludes with the theoretical model regarding the costs and benefits of NWW. However, the first step to take is researching whether this model is comprehensive, and secondly, the different components of the model need to be calculated. To fulfil both described steps, research is necessary. The way in which these steps will be taken and the outcomes of the different research methods will be described in this chapter.

The section, *Data analysis* elaborated the research method 'assessment'. The interviews were predominantly based on getting approval for the theoretical model, and the interview protocol was also based on questions regarding this approval. The interviews were recorded with the aim of reproducing specific quotations, and also to be able to replay the interviews. The cost centers of the virtual and physical dimensions are discussed separately and the outcomes given below.

The second part of this chapter involves the cost calculation on the physical and virtual dimensions. Before beginning the calculation, the current situation regarding both components is explained. Thereafter, the current costs are calculated for both dimensions, whereby the cost and benefit model is leading. The cost centres of both dimensions are calculated per employee. Moreover, the future costs are also calculated per employee, in which a situation is assumed where every employee is able to work time and place independent. At the end of the calculation, the current and future costs are compared with each other.

### 4.1 Assessment of the virtual dimension

The virtual dimension involves three cost centers which are; additional office management, adaptation of existing installations and advanced ICT. During the interviews, the components were discussed separately and a few quotations are given, based on the cost centers. To start with the component office management, Vos and van der Voordt (2001) explained this cost center as 'reservation or allocation of flexible workplaces and supervision of central filling systems' (page 57). However, the interviewees could not fully recognize this cost center and they gave a different meaning for this component. A few quotations of the interviews are given below;

*'Office management is not the right designation; it is clearer when it is called 'system development and management'. It is a costly component, however if it is possible to achieve efficiency in this component, than is Achmea able to reduce staff' (RF).*

*'In my point of view, office management has everything to do with digitalizing processes and within this part Achmea have to make strokes in digitalizing work processes' (BP).*

The second component of the virtual dimension involves adaptation of existing installations. Vos and van der Voordt (2001) have elaborated this cost center as the redevelopment of current systems, so that employees are able to work at home.

*'It is possible for most of the systems to connect with them at home, however not all systems are available. For my work, when I make access to the network of Achmea, I have access to all programs which I need' (BP).*

*'Due to combining more organizations (for example Interpolis and Achmea) a lot of systems exist. Therefore it must be indicated which systems are available at home and which are not available' (JvR).*

*'This name can also be changed, like the previous one. I think that it is clearer when this cost center is called 'process optimization and management'. This cost center should be aimed at optimizing current systems for working at home and at the office. Moreover, the more systems that can be automated, the better it is' (RF).*

The last component of the virtual dimension involves advanced ICT (mobile phones, laptop, internet and filing systems). Vos and van der Voordt (2001) have identified four facilities that employees need to work time and place independent. The interviewees have mentioned a few additional facilities;

*'Regarding the facilities of the virtual aspect, we have started with identifying which facilities we need to work time and place independent. We came to the conclusion that we need; a laptop, mobile phone and a webcam. Our laptops do have a standard webcam application; therefore this could be easily organized' (JvR).*

*'Video chat is also an application which could be very useful' (JvR).*

*'If you want that call centers are able to work at home, you also need ADSL-lines' (JvR).*

Most interviewees indicated that a policy regarding the facilities of working at home is important. At this moment, the Pension & Life division lacks a policy with fees and facilities.

*'The question; how will it be facilitated, is the most important question in this case' (JvR).*

*'The theoretical model is comprehensive on the basis of the virtual dimension' (FW).*

*'I think that this is complete, we do not need more resources' (JdJ).*

Moreover, during the interviews with the Tilburg employees, it became clear that the management has chosen to not offer facilities for call centers. However, Achmea's Board of Directors has the ambition to let everyone work from home.

*'Interpolis has chosen that the front office could not work at home, because these employees do need special telephones which is too expensive, it was approximately 300 euro's per month for each telephone and the purchase of a headset' (JdJ).*

*'The switching aspect in the telephony is important predominantly for the employees who are calling in a group. To make sure that the first employee gets a call, the next call is forward to the second employee and so on. The Avaya telephony is for example for employees in the claims processing very important, otherwise they are not able to work at home' (RF).*

#### **4.2 Assessment of the physical dimension**

The physical dimension involves four cost centers, which are; design ergonomically sound furniture, renting external working areas, renovation costs and, implementation costs of advisors. The same method was used as in the virtual dimension, the components are discussed separately and a few quotations are given, based on the cost centers.

The first cost center is based on ergonomically designed furniture. Vos and van der Voordt (2001) have explained this variable as 'flexible walls, floors, ceilings, support spots such as; coffee corners and seats (page 57).

*'Through the physical work environment and to be specific to change the work environment and the furniture, a different culture arises due to the attitude that will change' (RF).*

*'When the component 'design ergonomically furniture' does include the furniture at home, than the physical dimension is also comprehensive' (FW).*



*'You have to work structurally at home before you are able to get furniture at home, if you work incidentally at home, it sounds not friendly to say, but than an employee does not have rights to declare furniture' (BP).*

The second component of the physical dimension involves renting and furnishing external working areas. Vos and van der Voordt (2001) have elaborated this cost center as renting external working areas such as a hotel. However, for Achmea renting external locations is nowadays not the case.

*'When it is not possible for an employee to work at home, due to for example a lack of space, it could be the case that employees work in external locations, such as hotels. However, this is not the case for Achmea nowadays' (JdJ).*

*'I am not familiar with – for example – renting a hotel, however for the long term this could be an option to reduce travelling' (RF).*

*'You have to ask yourself the question; is it already necessary to hire external working areas. I think that this cost center is not significantly enough to take it already into consideration. At this moment, I would dare to leave this cost center at € 0' (BP).*

The third component of the physical dimension involves renovation costs. These costs are aimed at renovating and redesigning the building. However, during the interviews it became clear that the Leeuwarden location was renovated approximately one and a half years ago (see the quote). Moreover, the Pension & Life division is going to move in the spring of 2013. The new building has already been furnished according the NWW. Moreover, Interpolis (Tilburg location) was a pioneer in NWW, implementing the concept in 1996.

*'Renovation costs do also provide benefits; 'old' work environments provide 'old' behavior. A new work environment invites the employee to think differently and is the organization able to recoup their investments' (RF).*

*'The location Leeuwarden is renovated approximately one and a half year ago. Our division is located in building 5, which is renovated. Furthermore the renovation costs are charged by the fixed costs per workplace' (BP).*

*'I would not call it renovation costs, because these types of costs are not relevant but office costs and the renovation costs are part of the office costs' (BP).*

*'Actually every location is already designed on the NWW' (BP).*

The last component of the physical dimension involves the implementation costs of advisors. According to Vos and van der Voordt (2001) the organization needs advisors to help and advise the organization with implementation. These advisors could help the organizations with workshops, pilots and meetings. Achmea has engaged a consultancy company for the implementation in Tilburg and Apeldoorn, see the quotations below;

*'Achmea has hired Veldhoen, a consultancy company to accompany Achmea to a successful implementation of VSW. The consultancy company Veldhoen is started with their advisory in Tilburg' (RF).*

*'Veldhoen has indeed implemented the concept NWW by Interpolis. However some colleagues have made trips to Sweden, and they visited companies who are already working according to NWW. If you start with implementing the NWW, it is definitely a component that belongs to this dimension, however when you have got the philosophy which is carried out by everyone, this cost center is not longer necessary' (JdJ).*

*'Veldhoen has not advised Leeuwarden yet, only the locations Apeldoorn and Tilburg, moreover I think that the role of Veldhoen is almost finished. It is an important component; however we are able to fill in this role internally' (BP).*

#### **4.3 Adaptation of the cost and benefit model**

A number of interviews were held with Achmea employees who represent a location and have knowledge about a certain dimension. The reason why these interviewees were chosen is described in section 3.3 *Qualitative research*.

After conducting the interviews it became clear that the designation and content of some components of the virtual dimension needs to be changed. The first cost center is called 'office management', and van der Voordt and Yap (1996) explained more office management as reserving working areas and the maintenance of a digital and central archive.

The interviewees partly agreed with the explanation of the first cost center of van der Voordt (2001) and Yap (1996), see table 8. The interviewees agreed with the maintenance of a digital archive. The division has to make improvements on this part. It is important to have a lot of digital documents so that the employees have access to needed documents at home. The interviewees did not agree with the first part of the definition. The secretaries and employees are responsible for reserving their own working areas such as meeting rooms or video conferencing rooms. These tasks are already conducted and no additional support is needed for this component. Therefore a decision was made to change the component 'office management' into 'digitalization'.

The same arguments hold for the second cost center which is called 'adaptation of existing installations'. The interviewees also indicated that the designation of this component needs be changed to 'process optimization and management'.

Van der Voordt (2004) and Yap (1996) indicated that only the existing installations need to be adapted. However, the interviewees found this view too narrow and indicated that processes also need adapting. The interviewees found processes and systems inextricably related with each other.

The last cost center of the virtual dimension involves advanced IT facilities. During the interview it became clear which resources are applicable for Achmea. Based on the interviews, a decision was made that this component should involve the following facilities; laptop, mobile phone and a webcam. The production workers have frequent contact with clients and need an Avaya installation, ADSL and a headset.

The physical dimension involves four cost centers which are formed after the theory, and all these centers were submitted to the interviewees. The first cost center which was discussed was ergonomic design. The interviewees indicated that this cost center is definitely part of the physical dimension and is two-sided. On the one hand the current costs involve the accommodation costs. After implementing the NWW this component also involves the facilities at home.

The second component involves renting external work areas. The interviewees found that this component should be involved; however it is future-oriented. In addition, the third component involves the renovation costs and this cost center remains unchanged. The last cost center involves the advisors who support the implementation. The interviewees expressed the importance of advisors, however it seems likely that this cost centre will not be that high. Veldhoen, a consultancy company, has already advised Achmea on this part.

Following the interviews, it was concluded that the cost and benefit model be slightly changed. The physical dimension will remain the same. However, two adaptations take place in the virtual dimension. The component more 'office management' will be replaced by 'digitalizing' and the component 'adaptation of existing systems'

will be replaced by the component 'system and process optimization'. The adapted research model is shown in figure 7.

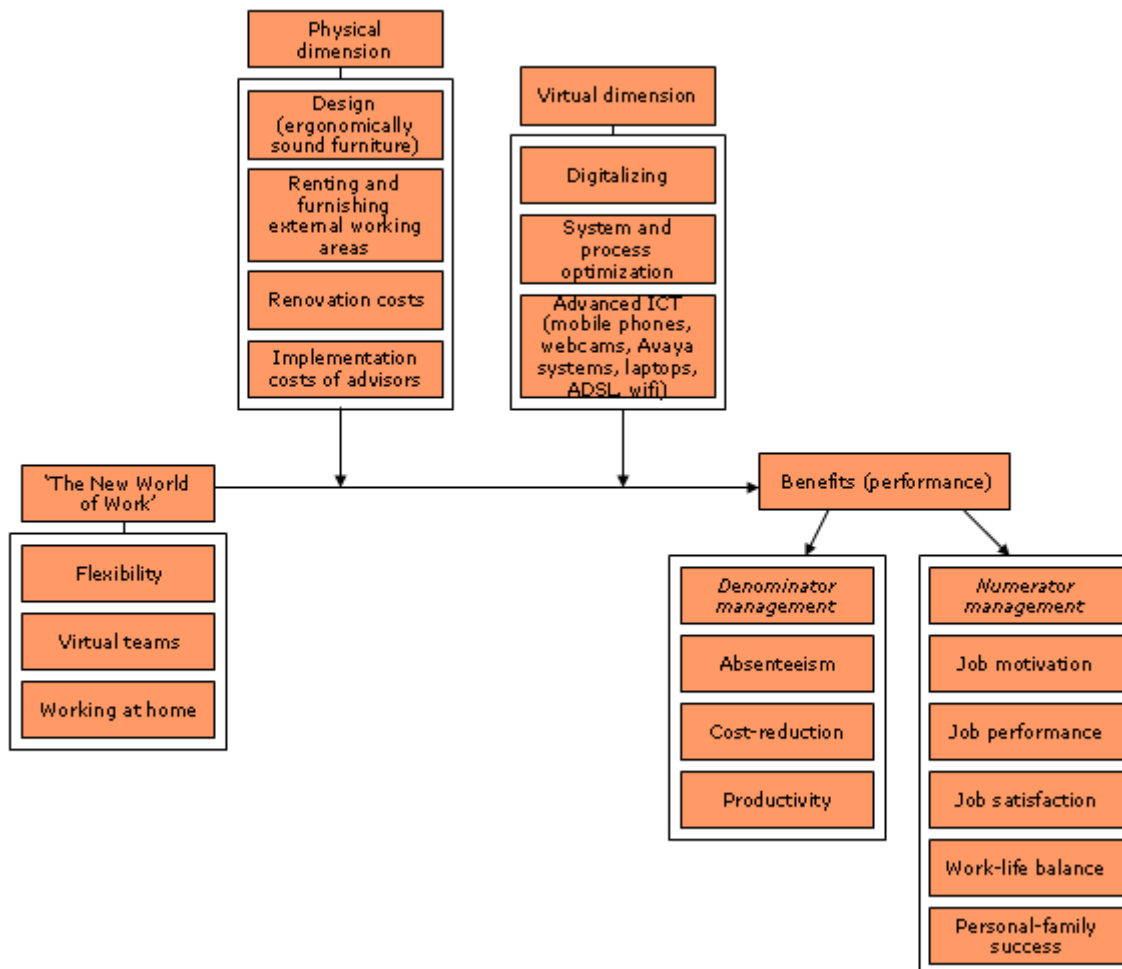


Figure 7: The research model after approval of the division

#### 4.4 Current status of the physical dimension

Figure 7 involves the final cost and benefit model, which is the result of the interviews. The definitive cost and benefit model will be filled in during this section. In particular, which effect NWW has on the costs regarding the virtual and physical dimensions was researched. A comparison will be made between the current and the future situation when NWW is implemented.

Before a start can be made regarding the costs on the virtual and physical dimensions, the current situations in the locations of Apeldoorn, Leeuwarden and Tilburg will be described. The physical dimension will be addressed first.

##### 4.4.1 Design (ergonomically sound furniture)

The Tilburg location involves the brand Interpolis. The core business of Interpolis also involves insurances, and the organization was merged with Achmea in 2005. Furthermore, Interpolis is a pioneer in the field of flexible working. In 1996, the organization introduced the philosophy of NWW and gave its employees the freedom, trust and responsibility to work according to their personal wishes. The Interpolis building is fully attuned to the

philosophy of NWW, and has flexible and ergonomic places, informal meeting areas and relaxing areas for employees.

Besides the ergonomic design at the office, ergonomic furniture at home should also be available for employees. Interpolis has a policy regarding working at home which is based on five regulations; 1) equipment such as a laptop, 2) internet connection, 3) telephone, 4) furniture and 5) a fee.

Interpolis provides laptops on lease-lend to employees. Employees are also allowed to use the laptop at home. In addition, the policy prescribes that the employer is responsible for an internet connection which is also paid by the employer. One precondition is set; the use of the connection is exclusively for business activities. The same procedure holds for the mobile phone. If work activities require a mobile phone, it is reimbursed by the employer on lease-lend. Furniture is the fourth aspect of the policy and is important because the furniture needs to meet the ARBO<sup>5</sup> regulations. The employee who works at home receives a checklist which indicates whether the workplace meets the requirements of the ARBO regulation. If this is not the case, furniture should be made available by the employer. In addition, Interpolis has a telework fee of € 14,04 per month for every day the employee works structurally at home. The fee reimburses gas, electricity and consumptions at home<sup>6</sup>.

The Apeldoorn location is also part of the Pension & Life division. In Apeldoorn, Achmea has two different locations; PWA and CBM. CBM is located in the new building, and a small part of the division is already located there. The PWA location will move to the new building in the spring of 2013. To give a short impression of the CBM location; it is fully furnished according to the principles of NWW described by Vos and van der Voordt (2001). For example, the furniture is ergonomic; it has flexi places, informal meeting places with items such as living room tables.

The last location of the division is in Leeuwarden, where approximately a quarter of the division works. This location was renovated one and a half years ago. Due to this renovation, the location is also furnished according to the principles of NWW. The location has ergonomic furniture, cockpits (silence rooms), flexi places and informal meeting areas (Vos and van der Voordt 2001). Therefore, it can be concluded that all the locations are furnished according to the new work concept.

The Achmea policy applies to the locations of Apeldoorn and Leeuwarden. The Achmea policy differs from the Interpolis policy. The policy is also based on five regulations, which are mentioned above. The same rule holds for the laptop as in Tilburg and is based on lease-lend. In contradiction with Tilburg, an employee is responsible for his/her own internet connection and has to pay for it themselves. Achmea reimburses a token which makes it possible to connect with internet.

The same regulation holds for the mobile phone as in Tilburg, when the work activities require a phone, it is reimbursed by the employer. The furniture at home should also meet the requirements of the ARBO. If the employee does not have a work place that meets these requirements, it is possible to get a work desk on lease-lend. In addition, no telework fee is given which is the case in Tilburg. Therefore, the policy regarding working at home is more luxurious for the Interpolis employees than for Achmea employees.

At this moment, the Board of Directors is working on a new policy that is unambiguous for the whole division. For this research, the old policy is leading where current costs are calculated. The new policy is leading where the future costs are calculated. The calculations mention whether the old or the new policy was used as a guideline.

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<sup>5</sup> In Dutch; Arbeidsomstandigheden wet (afkorting ARBO). The purpose of this law is to prevent illness and accidents.

<sup>6</sup> Based on internal documentation, available on Achmea.net

#### 4.4.2 Renovation costs

Besides the ergonomic design at the office and at home, the physical dimension also involves renovation costs. The renovation costs are predominantly based on adapting the current equipment into a new work style based on NWW. Section 4.4 *Current status of the physical dimension*, has already described that all the buildings are equipped according to the philosophy of NWW. Actually, one exception exists, that of the Apeldoorn PWA location. However, the employees will move in the spring of 2013 to Apeldoorn CBM. Therefore, no investments will be done for the Apeldoorn PWA location. It can be concluded that the cost center renovation costs can be set at € 0,-

#### 4.4.3 Costs of advisors

The last cost center of the physical dimension involves the costs of advisors (see figure 7). The costs of advisors are aimed at support and advice regarding the implementation of NWW. During the interviews it became clear that the locations of Tilburg and Apeldoorn received some advice from the consultants Veldhoen. They supported the locations during the transformation from the old work form to the new one. Leeuwarden has not yet been advised; however the interviewees indicated that the knowledge is already internal. It is not necessary to advise Leeuwarden regarding the implementation of NWW. The knowledge is in Tilburg and Apeldoorn, and could be transferred to Leeuwarden. It can be concluded that cost center costs of advisors can be set at € 0,-.

### 4.5 Current status of the virtual dimension

The virtual dimension involves three cost centers and is completely based on IT and communication. Figure 7 shows that the virtual dimension involves the components; digitalizing, process and system optimization and advanced IT with the components; laptop, mobile phone, token, webcam, ADSL and Avaya systems.

#### 4.5.1 Digitalizing

Digitalizing involves converting analogue documents into a digital medium in its simplest form. However, digitalizing in a broad sense also involves archiving. The interviewees indicated that the division has to do a catch up regarding this component. When employees work time and place independent they need documents that are digitally available everywhere. At this moment, the division is concerned with the approach of digitalizing. A recent research, conducted by The Dutch Bank (DNB) concluded that the archives of the division do not meet the official requirements.

This project is enormous and to give an impression; the current archive includes nine kilometers, 140 million documents and 2,000 source documents<sup>7</sup>. The ambition of the division is to have one central archive where the staff departments and the operation departments can save their documents.

At this moment, a project group is working to develop a central archive to meet the requirements of DNB, and for the employees who works at home, to have access to documents anywhere and everywhere. Management is striving for as few physical archives as possible. The departments that are going to move from Apeldoorn PWA to Apeldoorn CBM have been commissioned to move as few physical archives as possible.

#### 4.5.2 Process and system optimization

The cost center process and system optimization is predominantly based on access to the systems everywhere. In addition, the authorization regarding this center is important. It could be the case that some employees are not allowed to log in to some systems due to restrictions or safety.

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<sup>7</sup> Source: Vooronderzoek waarborgen continuïteit oude fysiek archieven (OFA), November 2011.

It was researched whether this is the case for the Pension & Life division. During an interview with the Information manager it was researched whether some employees are not allowed to log in, in particular systems. However this was not the case for this division. When an employee works at home, he/she logs in to Achmea. Therefore the employee has full access to every system from home.

One remark must be placed here; Interpolis conducted a research wherein they investigated whether employees have access to systems. The research concluded that every employee is allowed to access every system. However, the connection with Achmea (token) is not optimal for everyone. Some regions have a bad connection. This has to be further optimized.

#### 4.5.3 Advanced IT sources

The last cost center of the virtual dimension involves the advanced IT sources. The resources which are part of this cost center are; laptops, mobile phones, ADSL lines, webcams and Avaya systems. Which resources are needed, is dependent on the type of work. In section 2.9 *Control variables*, the job profiles are described and involve; knowledge worker, production worker and a mobile worker. An example of a production worker is an employee who works in administration.

The facilities needed differ between the types of employee. The contact center agent needs an Avaya phone at home, a headset and an extra-large monitor. The account manager only needs an ergonomic packet en route. Table 10 shows what kind of facilities the different types of workers need.

In the column of the knowledge worker no facilities are included. This means that the knowledge worker has all IT facilities to work time and place independent. Table 10 also shows that it is expensive to facilitate the contact center agents. This group needs most facilities to work at home. A distinction is made between the production workers. A part of the production workers, works on desktops and they represent production worker 2.

	Service description IT shop	Mobile worker	Knowledge worker	Production worker 1	Production worker 2	Contact Center Agent
One-off	Laptop bag				X	X
	Ergonomic packet at home	Optional	optional	optional	optional	optional
	Ergonomic packet en route					
	Monitor at home				optional	X
	Network cable					
	Headset					X
	Mobile phone				X	X
Recurring per year	Performance laptop					
	Standard laptop				X	X
	Teleworking basic			X	X	X
	Teleworking CCA					X
	Mobile phone			X	X	

Facilities which are needed

X = by the different type of employee

Table 10: The different type of workers and their needed facilities when working at home

A last item to mention regarding the virtual component is WIFI. WIFI is important to be able to work everywhere in the Achmea buildings. The locations of Tilburg, Leeuwarden and Apeldoorn CBM have WIFI in their buildings. However Apeldoorn PWA does not have this possibility, but they are going to move and

therefore it will not be implemented. Therefore, this component will not be taken further into consideration during this research.

The three locations where the division is located have been described. Regarding the current developments of NWW, it can be said that the division is on the verge considering its implementation. Predominantly, in the physical dimension, the division has undergone developments. However, regarding the virtual dimension developments still have to be made.

#### 4.6 Costs of the physical dimension

In the current and next section of this chapter, the costs of the physical and virtual dimension are calculated. What the effects are on the cost side when implementing NWW is researched. A cost calculation per employee is given, whereby the different types of workers are taken into consideration as far as possible.

##### 4.6.1 Design (ergonomically sound furniture) – current situation

The first cost center involves the ergonomic design. This cost center involves two types of costs; 1) The work desks, 2) Additional services which can differ per location. The work desks used by the division are charged monthly. The fee per work desk for the location Apeldoorn, Amsterdam and Leeuwarden are the same, the location Tilburg is more expensive. The second component of the cost center is the additional services which are; catering, telephonist and a shuttle service.

It could be the case that the locations purchase different services. For example a shuttle bus drives between the locations in Apeldoorn, and is paid by both locations (PWA and CBM). However, the Apeldoorn locations do not have a telephonist and therefore do not pay for this service. Table 11 shows the costs per location per work desk. For example, the Amsterdam location pays € 1.573 every year per work desk in contrast to Tilburg which pays € 2.810 per year per work desk.

Construction of the costs per location <sup>8</sup>	Rate	Amsterdam	Apeldoorn CBM	Apeldoorn PWA	Leeuwarden	Tilburg
Establishment Apeldoorn, Leeuwarden, Amsterdam	€ 1.070	€ 1.070	€ 1.070	€ 1.070	€ 1.070	
Establishment Tilburg	€ 2.810					€ 2.810
Catering Apeldoorn, Leeuwarden, Amsterdam	€ 350	€ 350	€ 350	€ 350	€ 350	
Catering Tilburg	€ 570					€ 570
Shuttle services Apeldoorn	€ 55		€ 55	€ 55		
Telephonist	€ 153	€ 153			€ 153	€ 153
Total costs per location per year		€ 1.573	€ 1.475	€ 1.475	€ 1.573	€ 3.533
Total costs per location per month		€ 131	€ 123	€ 123	€ 131	€ 294

Table 11: The rate of the work desks per location per year/month

The most noticeable data in table 11 is the Tilburg location because it is the most expensive location. The explanation for this difference with other locations is because of the luxurious design of the building. The building costs were expensive and this is therefore charged to the division.

The work desk rates are necessary in calculating the accommodation costs of the Pension & Life division. Appendix 8.4 provides an extensive calculation based on the months January up to and including June. The overview shows that the Apeldoorn PWA location has the most work desks, the most employees but also the highest ratio FTEs per work desks.

<sup>8</sup> The rates are based on the rate list of Facility Management 2012

Moreover, the calculation shows that the Amsterdam and Tilburg locations are expensive regarding the rent per square meter. This can be explained by a high rent at both locations. The building costs at the Tilburg location were very high and are charged to the division. The rent at the Amsterdam location is high due to a high price per square meter.

In one of the last columns where the total cost per employee is calculated, it can be observed that the work desks in Apeldoorn are the most expensive one. This can be explained by the many square meters per work desk. As mentioned previously, the division moves in the spring of 2013. A part of the division has already moved, and therefore the squares are encrypted by fewer work desks.

In addition to the furniture in the office, the furniture at home is also part of the physical dimension. It was already discussed that the current policy regarding at home consist of two versions; the Interpolis version and the Achmea version. Table 12 shows an overview of the current costs based on the current policies. The average fee per employee is € 11,-. The most expensive fee is for Achmea ADSL and is based on the old Interpolis regulations. However, the Achmea policy prescribes that furniture can be received on lease-lend and Interpolis refers to the ARBO-regulation. Due to unclear and different regulations the costs regarding furniture at home are not taken into account.

Fees	Number of employees who use the fee	Monthly Fee	Off costs	Total
Achmea ADSL (old-Interpolis)	79	€ 79		€ 6.257
Achmea Teleworking Basis	740	€ 8	-	€ 5.861
Achmea Teleworking Mobile	5	€ 25	€ 290,00	€ 125
Achmea Teleworking Contact Center Agent	4	€ 58	-	€ 233
			Per month Per employee <sup>9</sup>	€12.476 / 1127 = € 11

Table 12: Current costs regarding the fees

The cost center design has been accurately calculated. To say a few words on the robustness of these costs, the total costs based on the accommodation shows a more or less similar trend. The number of workplaces, which is an important indication for the total accommodation costs, shows one adaptation in the month of May and therefore also in the month of June. At the Apeldoorn PWA location one work desk was added and the increase of costs is relatively low. In addition, the costs were calculated with the use of actual and encrypted figures and can therefore be regarded as reliable.

The sum of fees which is shown in table 12 has to be interpreted with more caution. It certainly makes a difference when a few additional fees are paid based on Achmea ADSL. Therefore, the costs regarding the second part of this cost center has to be interpreted cautiously.

#### 4.6.2 Design (ergonomically sound furniture) – future situation

When NWW is fully implemented at all locations, it will have consequences for the ratio FTE per work desk. Achmea's ambition is to reduce the number of FTEs per work desk to 0,7 in 2013. Tilburg has an FTE per work desk of 0,78 and therefore it would have less effect on the costs for this location. Apeldoorn PWA has the highest FTE per work desk and therefore costs can be saved. Appendix 8.5 gives an illustration of the effect of the FTE reduction per work desk. The first noticeable point is the decrease in the work desk cost per employee. This decrease can be explained by the reduction of the number of work desks. In addition, the ration square and rent decreases by what the total costs decreases.

<sup>9</sup> The fee is based on the *current policies*



The cost comparison between January 2012 with January 2013, where the costs are based on 0,7 FTE per work desk, shows a saving of € 155.860,- per month. These savings are further calculated per location. Table 13 shows that the highest saving per employee can be achieved at the Apeldoorn PWA location. This is not a remarkable observation because the location has the most work desks. In contradiction, the smallest saving can be achieved at the Apeldoorn CBM location because this location has almost reached the objective of 0,7 FTE per work desk.

	January 2012	January 2013	Savings <sup>1011</sup>	No. emp.	Saving / per emp.
Amsterdam	€ 9.603	€ 8.736	€ 870	12	€ 73
Apeldoorn CBM	€ 54.804	€ 48.948	€ 5856	126	€ 46
Apeldoorn PWA	€ 279.226	€ 186.018	€ 93.208	386	€ 241
Leeuwarden	€ 148.811	€ 112.185	€ 36.626	285	€ 129
Tilburg	€ 155.174	€ 135.874	€ 19.300	318	€ 61
			€ 155.860	1127	€ 138

Table 13: Expected savings per location per employee

The new policy regarding working at home prescribes regulations regarding furniture, internet and equipment. The regulation for furniture involves € 1.000,- per five years with the precondition that the furniture meet the ARBO-regulation. An employee can claim an ARBO related work desk when he/she works structurally at home.

Fees	Number of employees	Fee per employee
Work desk at home	1028	€ 1.000,- (5 years) <sup>12</sup>
	€ 1.028.000 (5 years)	
	€ 205.600 (1 year)	
<b>Total</b>		<b>€ 28 per employee per month</b>

Table 14: Future costs regarding the fees

In addition to the costs of the work desks at home, the costs of teleworking are also relevant. Therefore, the future situation consists of the current costs which are € 12.476,- and the future costs of working at home which are € 1.028.000,- for five years. This calculation for 1028 employees for one month is € 17,- and € 28,- including the € 11,- of the fees (table 12, page 56).

The difference regarding policies in the current and future situation is predominantly based on the regulation for furniture at home. Due to this regulation, the costs per employee increase by € 17,-.

As was already described in the previous case for the costs of the current design, the costs of the future design have to be interpreted cautiously. The calculation of the accommodation costs is based objectively for 2013. Whether the FTE-norm of 0,7 will be realized is an important question. During the calculation, the norm is taken as a guideline; however it is still an assumption.

An assumption is also used to calculate the costs regarding the fees in the future situation. Information system SAP indicated that 1.028<sup>13</sup> employees work more than 24 hours a week. This number is used in order to calculate the fees based on an ergonomically work desk at home. The number of employees who work more than 24 hours at home is very sensitive. When an employee is employed for more than 24 hours a week, it could have an effect on the costs.

<sup>10</sup> Assumption 1: Based on the same work desk rates as in 2012

<sup>11</sup> Assumption 2: Based on the same amount of employees and work desks as in 2012

<sup>12</sup> The fee is based on the *future policy*

<sup>13</sup> SAP consulted on 05/09/2012

#### 4.7 Costs of the virtual dimension

The virtual dimension involves three cost centers which are; digitalizing, system and process optimization and advanced ICT.

##### 4.7.1 Digitalizing – current situation

Some information has already been given about digitalizing in section 4.5 *Current status of the virtual dimension*. Achmea should make improvements regarding this cost center. When the aim of the division is to work time and place independent, the employees should be able to access documents, contracts, information, etc.

Currently, the Pension & Life division has a physical and a digital archive. The impression of the size of the physical archive was also given and includes nine kilometers. The costs of all these kilometers are based on two factors; order quantity and a rate. This rate is not fixed, however the service is leading in this case.

Table 15 shows both the costs of the physical and the digital archives. It can be noticed that the costs of the digital archive are significantly higher than the costs of the physical archive. However, the second part of the table shows that the digital archive contains more documents than the physical archive. A comparison between the rates for both types of archives is not possible because the division has different rates for different services.

Physical archive	April	Amount of pieces	May	Amount of pieces	June	Amount of pieces
	€ 292.998	56.518	€ 101.931	34.708	€ 86.795	31.281

Total January up to and including June	€ 481.723,04
On average, per employee per month	€ 71

Digital archive	April	Amount of pieces	May	Amount of pieces	June	Amount of pieces
Custody	€ 262.031	85.075	€ 215.578	115.241	€ 107.304	34.839
License digital archive	€ 88.111	4.230	€ 21.809	1.047	€ 20.997	1.008
Total	€ 350.142		€ 237.388		€ 128.301	

Total January up to and including June	€ 715.830
On average, per employee per month	€ 106

Table 15: Current costs regarding the physical and digital archive

Table 15 shows the costs of both types of archives from the month of April. The costs for April are very high in both cases. Achmea invoices the costs in the month of April, but it is included for the months January, February and March.

The aim of digitalizing the physical archive is bilateral; on the one hand DNB concluded that the physical archive should be addressed. On the other hand, Vos and van der Voordt (2001) consider digitalizing as a cost center. The last reason is why this cost center is taken into consideration.

##### 4.7.2 Digitalizing – future situation

In the future situation, more documents should be digitally archived. The division has thought about digitalizing the entire physical archive, the costs for this project is between € 10 and € 20 million. However, the division is not going to digitalize the entire physical archive. Too few documents are retrieved from the current physical archive to make it attractive to digitalize everything.

Although, the DNB research concluded that a part of the physical archive should be digitalized, for example information is saved on CD-ROMs, DVDs, and diskettes, it is too dangerous to save information on these types of information carriers. In addition, the work instructions should also be adapted. It is very important to develop the right work instructions and educate employees so that they are able to find the right source documents. At this moment, Achmea has 2,000 different source documents and all the types should be findable in the archive. Finally, courses should be offered for old physical archive (abbreviation OFA) applications. They should know where to find what.

The future costs are based on three different kinds of costs. The first costs involve the off-set costs which are based on the redevelopment of the physical archive. An adaptation of the current work instructions has to be made, courses need to be developed and the DVDs, CD-ROMs and diskettes need to be replaced. The research has indicated that the off-set costs are in total € 413.225,-<sup>14</sup>. The chosen depreciation period is two years. Therefore the costs per employee per month are €15,- see table 16.

Solution component	Estimate off costs
Digitalizing floppy's, disks etc.	€ 51.935
Work instructions logistics process	€ 9.750
Work instructions history document	€ 16.250
Educations requests OFA	€ 6.500
Digitalizing papers department stores	€ 99.815
Total	€ 184.250
Provisional sum	€ 100.000
Costs project management	€ 36.850
Unprovided	€ 92.125
Total	€ 413.225 <sup>1516</sup>
Total per employee per month	€ 15

Table 16: Future off-set costs regarding the digital archive

Besides the off-set costs, digitalizing also involves annual costs which are based on digital department archives, storages and a record manager. Per month per employee, the annual costs are €9,-.

Part	Estimate annual costs
Record manager	€ 65.000
Digital department store	€ 38.100
Storage CD-ROMs, DVDs etc	€ 26.970
Total	€ 130.070
Total per employee per month	€ 9

Table 17: Future annual costs regarding the digital archive

In addition, the research report takes also savings into account. These savings are predominantly based on time due to clear work instructions and therefore employees know where to find the data. It is assumed that the off costs are based on one year. The savings, which are predominantly based on time, amount not yet 10% of the costs of implementing per employee.

Annual savings	€ 47.992	Due to time saving per each application in old physical archive
Work instructions Saving per employee	€ 4	

Table 18: Savings of the archive

<sup>14</sup> Based on the report of The Dutch Bank (DNB) (2011)

<sup>15</sup> Additional research is needed for some activities due to a cost estimation

<sup>16</sup> Involves global costs, it is possible that due to new insights changes take place

Regarding the digitalizing component, the difference between the current and future situation is predominantly based on the off-set costs. When new work instructions are made, courses are developed and disks, DVDs and CD-ROMS are digitalized, the costs will decrease rapidly.

In addition, the current costs regarding the archive were still taken into account. The physical archive of nine kilometers needs to be paid. However a small part of the archive will be digitalized, but it is very difficult to calculate what that means exactly for the physical archive. Therefore, it was assumed that the costs remain the same. The same assumption holds for the digital archive. Digital documents have to be paid also, and therefore these costs remain the same.

The robustness of the digital cost center is large. The DNB research also indicated that further research is necessary to calculate a more precise calculation. In addition, current costs regarding digitalizing were predominantly based on pieces. The amount of pieces differ per month and thus also the costs of this center.

#### 4.7.3 System and process optimization – current situation

The second cost center of the virtual dimension involves the system and process optimization. The current costs of this center are predominantly based on the system and release costs. Systems costs involve the running of systems, maintenance and the use of the systems. The release costs involve for example licenses of hard- and software, upgrades, maintenance and control. Both types of costs are shown in table 19. The costs per month and per employee have also been calculated and are on average € 1.609,-.

	January 2012	February 2012	March 2012	april-12	May 2012	June 2012
System costs	€ 1.307.885	€ 1.358.556	€ 1.535.785	€ 1.640.846	€ 1.364.856	€ 1.565.052
Release costs	€ 229.551	€ 281.697	€ 484.342	€ 219.045	€ 497.622	€ 393.321
Total costs	€ 1.537.436	€ 1.640.253	€ 2.020.127	€ 1.859.891	€ 1.862.478	€ 1.958.373
Total up to and including June € 10.878.558 <sup>17</sup>						
Total per employee per month € 1.609						

Table 19: Total system and release costs

#### 4.7.4 System and process optimization – future situation

In the future situation regarding the systems, it is important that all the systems are accessible for every type of employee at home. It could be the case that some systems are not available at home due to technical restrictions. Moreover, it could also be that employees do not have the authorization to log in at home. Security restrictions could prohibit access.

The Pension & Life division has inventoried the extent to which working at home is restricted. As was mentioned before, there are no restrictions regarding authorization. However, access to the Achmea network is not always easy. It is dependent of the region where the connection is made.

The system costs are calculated with the use of available internal information. The costs from the month of January up to and including June were actually charged to the division. The future situation provides no additional costs and therefore it was decided to hold the costs at the same level.

#### 4.7.5 Advanced IT – current situation

The last cost center of the virtual dimension involves the advanced ICT costs. The IT costs involve a few components. The first component is the work desk. A docking station, mouse and a keyboard are part of the

<sup>17</sup> The release and system costs are based on the accounting period; which means settled costs

work desks costs. In addition to the work desk, the user accounts are part of these costs, printer/fax/scanner, telephony and applications are part of the work desk costs.

The work desk costs for the month of January up to and including June are € 1.887.357,- and divided per month and the number of employees. The total amount of IT costs per employee is € 279,- see table 20.

Work desk costs IT January 2012		Work desk costs IT February 2012		Work desk costs IT March 2012	
Work desk	€ 166.480	Work desk	€ 166.435	Work desk	€ 715.830
User account	€ 94.102	User account	€ 98.157	User account	€ 99.033
Printer, fax, scanner	€ 25.908	Printer, fax, scanner	€ 29.000	Printer, fax, scanner	€ 28.382
Telephony	€ 94.137	Telephony	€ 87.257	Telephony	€ 96.594
Applications	€ 63.830	Applications	€ 68.821	Applications	€ 68.607
Remaining	<b>€ 50-</b>	Remaining	€ 5.786	Remaining	<b>€ 20.951-</b>
	€ 444.406		€ 455.456		€ 987.494

Work desk costs IT April 2012		Work desk costs IT May 2012		Work desk costs IT June 2012	
Work desk	€ 356.021	Work desk	€ 349.713	Work desk	€ 340.640
User account	€ 101.455	User account	€ 98.311	User account	€ 98.487
Printer, fax, scanner	€ 31.610	Printer, fax, scanner	€ 22.293	Printer, fax, scanner	€ 22.644
Telephony	€ 96.859	Telephony	€ 91.799	Telephony	€ 90.959
Applications	€ 85.820	Applications	€ 79.060	Applications	€ 73.575
Remaining	<b>€ 5.556-</b>	Remaining	<b>€ 78-</b>	Remaining	<b>€ 1.770-</b>
	€ 666.209		€ 641.099		€ 624.535

Total up to and including June € 1.887.357	
Work desk costs per employee € 279	

Table 20: Total costs of the work desk costs IT

It can be assumed that the IT work desk costs remain on average the same when implementing NWW. Of course, a few shifts are expected to take place. For example the costs for telephony will increase because some work activities need a mobile phone. The number of work desks will be reduced (0,7 in 2013) and therefore it could be expected that these costs will decrease. However, it is not possible to give a detailed calculation about these types of costs and therefore it was decided to keep the same costs.

#### 4.7.6 Advanced IT – future situation

The future situation requires that all employees work time and place independent. Table 10 (page 54) showed which facilities are needed per work activities. Table 21 shows the costs per facility. The mobile and knowledge workers already have the facility to work time and place independent. The mobile workers have the possibility to obtain an ergonomic packet at home or en route.

The contact center agents are the group of workers who are the most expensive. However, one remark has to be placed here. The division has not yet decided whether all the contact center agents get teleworking CCA. Therefore, caution is required when this data is interpreted.

One final assumption is the facilities. The new policy prescribes that an employee has to arrange the needed facilities with a manager. When a lot of mobile workers arrange to have an ergonomic packet with their manager, the cost calculation shows in that case another view.

	Service description IT shop	Mobile	Knowledge	Production	Production	Contact Center Agent
One-off	Laptop bag				€ 65	€ 65
	Ergonomic packet at home	optional (€ 300)			optional (€ 300)	optional (€ 300)
	Ergonomic packet en route	optional (€ 200)				
	Monitor at home				optional (€ 150)	€ 150
	Network cable					
	Headset					€ 166
	Mobile phone				€ 132	€ 132
	<b>Total</b>	<b>€ 0</b>	<b>€ 0</b>	<b>€ 132</b>	<b>€ 197</b>	<b>€ 381</b>
Recurring per month	Standard laptop				€ 103	€ 103
	Teleworking basic			€ 7,92	€ 7,92	€ 7,92
	Teleworking CCA (incl. appliance)					€ 162,50
	Mobile phone			€ 23	€ 23	
	<b>Total</b>	<b>€ 0</b>	<b>€ 0</b>	<b>€ 31</b>	<b>€ 134</b>	<b>€ 273</b>
	<b>On average per employee</b>	<b>€ 99</b>				

Table 21: The different type of workers and the costs of the needed facilities when working at home

#### 4.8 Additional savings

The calculation of the costs regarding NWW is predominantly based on Vos and van der Voordt (2001). Table 8 on page 30 involves a benefit of NWW which has not yet been discussed. The benefit involves a reduction of travel costs.

The division has a policy regarding travel costs which is based on public transportation and own transport. The employees have the possibility to choose between both types of transport.

When an employee chooses public transportation, no restriction regarding distance is operative. An employee can in all cases claim a subscription on train, bus etc.

The policy regarding own transport has a restriction. The employee has to travel more than 10 kilometers to an Achmea location. When this is the case, the employee can claim a fee. The fee has a maximum of 50 kilometers one way. In addition, a few employees make use of a lease-car. However, the calculation of the travel costs does not take the lease-car costs and the public transportation costs into account. The expectation is that these costs will remain the same after implementing NWW.

Table 22 shows the calculation of the transport. The number of employees is based on 24 hours a week and own transportation. The costs per month are € 50.530,30 based on a total amount of 12.604 km. The average amount of travel days per employee are four. It was assumed that an employee works one day a week at home, and results in a saving of €12.633,- per month.

Additional savings	Number of employees	Amount of km	Travel days	Costs
Own transport	356	12.604	1437,5	€ 50.530
Average travel days p/w	4			€ 12.633
Average travel days p/m	16			
Average travel days p/w	3			€ 37.898
Saving				€ 12.633
Saving per employee				€ 10

Table 22: Savings based on kilometer fees

#### 4.9 Costs current – future situation

Figure 7 shows the research model of this thesis. The physical and virtual dimensions serve as cost centers. The cost centers for each dimension are discussed separately. The current situation was calculated and with a few assumptions, the future situation was also calculated. The costs are repeated in table 23 and the costs per employee per month are shown.

It can be concluded that when the Pension & Life division transfer from the current situation to the future situation, when employees are able to work time and place independent, the division can save € 150,- per employee, per month. Again, caution is required in interpreting these figures.

The highest saving can be realized on the accommodation costs. Due to the ratio FTE per work desks, a saving can be realized of € 280 per employee, per month. The highest investments need to be done on the cost component advanced IT facilities. The type of employee, contact center agent, has a high part in the average costs.

	Costs current situation	Costs future situation
<b>Physical dimension</b>		
Accommodation costs	€ 576	€ 298
Policy working at home	€ 11	€ 28
Renovation costs	€ 0	€ 0
Costs of advisors	€ 0	€ 0
<b>Virtual dimension</b>		325
Digitalizing (physical)	€ 71	€ 71
Digitalizing (digital)	€ 106	€ 106
Digitalizing (off costs)	€ 0	€ 15
Digitalizing (annual costs)	€ 0	€ 9
Digitalizing (savings)	€ 0	- € 4
System and process optimization	€ 1.609	€ 1.609
Advanced ICT	€ 279	€ 279
Advances ICT - facilities at home	€ 0	€ 99
<b>Additional savings</b>	€ 0	- € 10
	2065	2183
<b>Total</b>	€ 2.652	€ 2.501

Table 23: Comparison between the current costs and the future costs

## 5. Empirical results of the mental dimension

This section elaborates and discusses the results of the quantitative part of this research. This section is divided into three different parts; univariate, bivariate and multivariate. The different parts involve the analyses of tests which were conducted with the program SPSS.

The aim of the tests is based on the two phases described in this research. On the one hand tests were conducted to determine whether significant relationships exist between the independent and dependent variables. In addition, regressions were conducted to determine the influence of the moderating variables.

On the other hand, the tests were conducted to determine the difference between the locations. Does a significant difference exist between the level of social cohesion at the locations of Leeuwarden and Tilburg? Or does a significant difference exist between the levels of trust in management at different locations?

### 5.1 Univariate analysis

Univariate analysis is the simplest form of analysis and needs to be done as a kind of preparation for the bivariate and multivariate analyses. The single variables are analysed separately with the use of frequency tables, Cronbach's Alpha, outlier analysis, normal distribution, skewness, kurtosis and remarkable outcomes of variables. The aim of the univariate analysis is to determine whether the population follows the normal distribution. The normal distribution is one of the preconditions for the regression analysis which is discussed in section 5.2.

#### 5.1.1 Outlier analysis

The aim of the outlier analysis is to check whether respondents gave answers which are exceptional. However, the respondents were given the opportunity to answer on the basis of a 5-point Likert scale. Therefore, no exceptional answers were expected.

A disadvantage of the online survey is that it must be manually verified whether respondents gave more than one answer. It could be the case that a respondent doubts whether he/she agrees with a statement or has a neutral position. In some cases the respondents gave two answers. When this was the case, the respondent was given a missing value (-99) on that question.

A closer look at the data showed that one respondent did not answer any question. It was remarkable that the answers were all missing values, and therefore one respondent was not taken into consideration during the analysis.

Appendix 8.6 shows the outlier analysis of the dependent variable *performance*. The first part of the table shows the descriptive statistics with outliers and the second part is the analysis without outliers. Comparing the first mean with the 5% trimmed mean shows a little difference. It can be concluded that the outliers do not influence the data in an extreme way. Therefore the number of respondents remains 555 after deleting the one respondent as discussed above.

#### 5.1.2 Descriptive statistics

The descriptive statistics are analysed on four items; mean, standard deviation, minimum and maximum. The output of the descriptive statistics can be viewed in table 24. The table shows that the dependent variable *performance* has the highest mean. During that construct employees were asked to judge their own performance.



Independent variables	Nr. Of items measured	Mean	Std.deviation	Min.	Max.
Flexibility	3	3,8539	0,75132	1	5
Virtual Teams	10	3,8348	0,56975	1,75	5
Working at Home	9	2,9764	0,34758	1,56	4,11

Dependent variable	Nr. of items measured	Mean	Std.deviation	Min.	Max.
Performance	6	3,912	0,38159	2,83	5

Moderating variables	Nr. of items measured	Mean	Std.deviation	Min.	Max.
Social cohesion	6	3,1814	0,45641	1,5	4,33
Result-oriented leadership	8	2,9218	0,48916	1	4,75
Trust in colleagues	10	3,6187	0,44685	1,8	4,5
Trust in management	9	3,6833	0,43332	1,78	5

Control variable	Nr. of items measured	Mean	Std.deviation	Min.	Max.
Control variable	3	3,684	0,55352	1,33	5

Table 24: Descriptive statistics

The moderating variable *result-oriented leadership* has the lowest mean. Questions regarding this construct were based on the manager and the extent to which the manager manages on output.

The independent variable *flexibility* has a high mean and the highest standard deviation. A high standard deviation means that the spread of this variable is large.

In comparison with the other variables, the independent variable *working at home* has a relative low mean and also a relatively low standard deviation, which means that the spread of this variable is small.

The last two columns display the minimum and the maximum. In some cases, none of the respondents have chosen a one or a five. This means that none of the respondents strongly agree or strongly disagree with the statement. The independent variable *working at home*, the moderating variables *social cohesion*, *result-oriented leadership* and *trust in colleagues* are examples of that.

### 5.1.3 Normal distribution

The aim of the normal distribution in this research is bilateral. 1) On the one hand it is investigated whether the constructs are normally distributed to detect deviations. 2) On the other hand the normal distribution is the precondition for conducting a regression analysis.

The normal distribution of the independent, dependent and moderating variables is shown in appendix 8.7 *Normal distribution*. On a closer look at the figures, no deviation can be detected.

### 5.1.4 Skewness and kurtosis

The skewness and kurtosis are two indicators which give an indication of whether the distribution can be regarded as normal. The skewness is a measure of symmetry and shows how skewed a distribution is. A positive skewed distribution means that the majority of the sample answered on the left side of the mean. In contradiction, a negative skewed distribution indicates that the majority of the distribution is on the right side of the mean.

The kurtosis indicates the extent of peak distribution. A high peak indicates that the variation of the data can be explained by extreme values. A flat peak indicates a flat distribution and the variation is explained by less extreme values.

The bell-shapes can be viewed in appendix 8.7 *Normal distribution*. Regarding the kurtosis, the variables *working at home*, *social cohesion* and *result-oriented leadership* have a peaked distribution. In comparison with the other variables, these three mentioned variables have the lowest mean and the lowest standard deviation. A low standard deviation indicates that the data is centred on the mean. The variables *flexibility* and *virtual teams* have a flat distribution and a higher standard deviation.

With regard to the skewness, the variables *flexibility*, *trust* and *social cohesion* are variables with a negative skewed distribution. The variable *performance* has a positive skewed distribution and the majority of the sample answered on the left side of the mean.

To determine whether the distribution is normal on the basis of the kurtosis and the skewness, the rule of thumb is whether both measures fall within the range of minus three and plus three. Appendix 8.7 *Normal Distribution* also shows the kurtosis and the skewness. On the basis of descriptions it can be concluded that no remarkable data was found.

### 5.1.5 Factor analysis

The factor analysis was conducted to determine whether the expected constructs are supported by the data. In addition, the factor analysis is a useful tool to view the underlying values of the construct. The factor analysis can be viewed in appendix 8.8. The rule of thumb regarding the correlation of the constructs is between - 0.9 and 0.9. The factor analysis of appendix 8.8 does not show striking results.

### 5.1.6 Cronbach's Alpha

The meaning of Cronbach's Alpha has already been discussed in section 3.11 *Reliability*. Cronbach's Alpha is regarded as reliability or an internal consistency coefficient. Cronbach's Alpha involves six scales, from unacceptable to excellent. Researchers have different opinions regarding the minimum of an alpha. Some researchers regard a construct of 0,6 as reliable (Hair et al., 2006) and others find a construct of 0,7 as reliable (Babbie, 2001).

The alpha from  $0.80 > \alpha \geq 0.70$  is acceptable, between  $0.90 > \alpha \geq 0.80$  is good, and  $\alpha \geq 0.90$  is excellent.

All the constructs have a reliable alpha, differing from  $\alpha = 0,685$  to  $\alpha = 0,850$ . The elaboration of the alphas per variable is displayed in appendix 8.9.

### 5.1.7 Frequency analyses per location

The last section of the univariate analysis is the frequencies per location. The independent variables *flexibility*, *working at home* and *virtual teams* were researched per location. The output is displayed in appendix 8.10 *Frequency analyses per location*.

The first independent variable of appendix 8.10 is working at home. In general it can be said that most of the employees at the Tilburg location work structural or incidental at home. The second location where employees work structural or incidental at home is Apeldoorn CBM.

The locations of Leeuwarden and Apeldoorn PWA are the locations that are running behind based on this variable. Most respondents of the Leeuwarden location indicated that they want to separate their work and private lives and this is the main reason why most respondents do not work at home. Most of the respondents from the Apeldoorn PWA location indicated that they do not have sufficient facilities to work at home.

Appendix 8.4 gives an overview of the accommodation costs per location. An important part of the accommodation costs involves the ratio between employees and workplace. The locations of Tilburg and Apeldoorn CBM have the lowest rate. The output of the frequency analysis is in line with the ratio. In general, due to the low ratio the employees of both locations are more or less forced to work structural or incidental at home.

The second independent variable is *virtual teams*. The Apeldoorn CBM location has the most employees who participate in a virtual team and the Leeuwarden location has the least employees who participate in a virtual team. The Apeldoorn PWA location is the location that is most satisfied about the virtual team and Leeuwarden is least satisfied.

The last independent variable is *flexibility*. All the respondents answered the questions regarding this construct. The most flexibility was experienced at the Tilburg location and the least flexibility experienced at the Apeldoorn CBM location.

It can be concluded that the Tilburg location is a forerunner on NWW. At this location, most of the employees work structural or incidental at home. Moreover, these employees experience the most flexibility. The Leeuwarden location is running behind. These employees experience less flexibility and the percentage of employees who work at home is the least. The employees who do not work at home gave in most cases the reason *'I do not want my personal and work life intertwined'*.

It could be the case that both variables have an influence on each other. Regarding the variable virtual teams, the employees of the Apeldoorn CBM location take most part in a virtual team and the location Leeuwarden the least.

The frequency analysis of the moderating variables is also elaborated in appendix 8.10. The variable trust is disaggregated in trust in colleagues and trust in management. Tilburg is the location that scored best on the four variables. The employees of this location experience a high degree of social cohesion, trust and are managed on output. The Apeldoorn CBM location has the lowest score on all the variables.

## **5.2 Bivariate analysis**

In the previous section the univariate part was elaborated. Several tests were conducted on the basis of one variable. The normal distribution is a precondition for conducting the bivariate analysis. The univariate analysis does not show particular results. The bivariate analysis is based on two variables and examples of test which were conducted during this section are regression analysis and correlation analysis.

### **5.2.1 Regression analysis**

The aim of the regression analyses is to analyse whether cohesion exists between two variables expressed in a linear regression equation. In addition, the correlation can be measured to determine the strength of the cohesion.

Prior to a regression analysis the normal distribution of the population needs to be researched. The second precondition of the regression analysis is the test of homogeneity.

The homogeneity test is based on measuring the variance in a population. If the test is significant, it means that no difference exists in the population. The output of the Leven's test is shown in appendix 8.11 *Regression analysis*. The p value is  $p > 0,619$  which is not significant. Therefore, it can be concluded that the sample meets the precondition of the regression analysis and a difference in the variance exists.

A single regression is measured first. In chapter 2, the theoretical framework was discussed that the independent variables *flexibility*, *working at home* and *virtual teams* are dimensions of NWW. The NWW leads to benefits on the soft side (figure 5).

The population was analysed on employees who participate in a virtual team and who work structural or incidental at home. This was done in order to analyse whether the NWW has a significant relationship with performance. This relationship was described in chapter 2; however it was researched whether this is also the case for the Pension & Life division. However, one remark has to be made here; the total research population is 555. To involve only the employees who meet the precondition of working at home and virtual team, has consequences for the number of respondents involved. The way in which this part is dealt with will be discussed later.

The first regression analysis which can be viewed in appendix 8.11 *Regression analysis* is based on the independent variable *NWW* and the dependent variable *performance*. The ANOVA test shows that a significant relationship exists between NWW and performance ( $P < 0,05$ ). The significance means that performance can be explained by NWW.

In addition to the first regression analysis, more regressions were conducted with the separate independent variables in relation with the dependent variable *performance*. The output of this regression is also displayed in appendix 8.11. Based on the output it can be concluded that for all the independent variables ( $p < 0,05$ ), which is significant. Therefore, the relationship between NWW is significant and the independent variables in relation with performance are also significant.

### 5.2.2 Regression per location

In addition to the regression analysis for the whole Pension & Life division, separate regressions were conducted with the control variable. In this case, the control variable was 'locations'. The output of the regression analyses is shown in appendix 8.12 *Regression analyses per location*.

The first regression is based on the Apeldoorn CBM location. This regression showed that NWW does not have a significant relationship with performance because  $P > 0,05$ .

In contradiction, Apeldoorn PWA, Leeuwarden and Tilburg showed a P-value of  $< 0,05$  which is significant for the three mentioned locations.

### 5.2.3 Correlation

The previous section elaborated that NWW has a significant relationship with performance. A correlation was conducted to determine the strength and the direction of the relationship.

The analysis is based on the Pearson correlation, see appendix 8.13 *Correlation analysis*. The values of the correlation table can differ from +1 to -1. The correlation table shows only positive values. The values explain how tightly the variable is divided around a conceivable line. The closer to one, the tighter the values are around the line. The ideal situation is a one, and therefore the same variables are labelled with one. All the variables have a significant value except for working at home and flexibility.

### 5.2.4 Regression per type of employee

In addition to the control variable location, the control variable 'type of employee' was also researched. The output of the regression tests is shown in appendix 8.14. The relationship is  $p < 0,05$ , which is significant. The relationship between NWW and performance is significant. The regression test with the inclusion of the type of employee is also significant.

### 5.3 Multivariate analysis

The last part of the analysis involves the multivariate part. In the previous part, tests were conducted with two variables. In the multivariate part, tests with more than two variables were conducted. Tests that will be discussed in this section are; regression analysis with moderating variables and regressions with the control variables. These tests were conducted to investigate whether a difference exists on the independent and moderating variables per location and the type of employee.

#### 5.3.1 Regression analysis with moderating variables

The mental dimension involves three moderator variables. A regression analysis was conducted to determine if the relationship between NWW and performance is influenced by a moderator variable. The output of the regression analysis is shown in appendix 8.15 *Regression analysis with moderating variables*.

The first moderating variable which was tested was result-oriented leadership. The output shows three results; 1) the significant relationship between NWW and performance. 2) The positive regression between managing on result and performance. The more the manager manages on result, the better the performance. However, this relationship is not significant. 3) The last regression is also positive and can be interpreted as the more a manager manages on output, the more cohesion exists between NWW and performance.

The second moderator variable was social cohesion. 1) The significant relationship between NWW and performance was again confirmed. 2) The moderator social cohesion shows a positive regression. The more employees experience social cohesion, the better the performance. However, this relationship is not significant. 3) The negative last regression is remarkable; the higher the extent of social cohesion, the lower the coherence between NWW and performance. If employees experience more social cohesion it has no influence on their performance than employees who experience less social cohesion.

The last moderator variable is trust. Trust shows a positive regression and a significant relationship because  $P < 0,03$ . The more trust employees experience, the better their performance. However, a negative regression is shown regarding NWW and trust. NWW does not have an influence on trust and therefore it is not a moderator on the relation NWW and performance.

#### 5.3.2 Regression analysis with moderating variables per location

In the univariate analysis it was researched whether the locations differ on the moderating variables. The univariate analysis showed a difference, and the multivariate analysis tested whether a significant difference exist.

Appendix 8.16 involves the output of the ANOVA tests. The p-values of the moderating variables social cohesion, result-oriented leadership and trust in colleagues are not significant. It can be interpreted that the means of the populations are more or less the same. In contradiction, the variable trust in management has a p-value of  $p < 0,05$  which is significant. The means of the populations differ regarding this variable. In addition, further analyses are needed to determine whether one or more means differ per location.

The multiple comparisons test, conducted with Bonferroni is shown in appendix 8.16. The test shows a significant difference between the level of trust in management at the locations of Tilburg and Leeuwarden. The Tilburg location has significantly more trust in management than the Leeuwarden location.

In addition to the moderating variables, the independent variables and the dependent variables were also tested to research whether a difference exists. The output of these tests is shown in the same appendix. The p-value of the independent variables *flexibility*, *virtual teams* and *working at home* have a p-value which is  $p >$

0,05. This means that no significant differences exist between the independent variables and the locations. The same output holds for the dependent variable *performance*,  $p > 0,05$  which means no significant relationship.

### 5.3.3 Regression analysis with moderating variables per type of employee

In addition to the control variable location, the type of employee was also tested. The output of these tests is shown in appendix 8.17.

To start with the moderating variables; the moderating variables *trust in management* and *social cohesion* do not have a significant difference between the types of employees. The variables *trust in colleagues* and *result-oriented leadership* have a p-value of  $p < 0,05$  which is significant.

To conduct a more detailed test regarding the significance of result-oriented leadership, the Bonferroni was again conducted. What is remarkable is that this test does not show any significant relationship between the type of employee and result-oriented leadership. The Scheffe test was therefore used to determine whether a significant relationship exists or not. The Scheffe test showed a p-value of  $p > 0,05$ , which is not significant.

The variable *trust in colleagues* had the same remarkable output in the Bonferroni test as the variable *result-oriented leadership*. The Scheffe test was therefore also conducted to determine whether it was significant or not. The Scheffe test had a p-value where  $P > 0,05$  which is not significant.

Moreover, as with the previous control variable location, the independent variables were also tested. The variables *working at home* and *virtual teams* both have a p-value of  $P > 0,05$ . Therefore both relationships are not significant. The variable *flexibility* has a p-value of  $P < 0,05$  and is significant. The Bonferroni test based on flexibility is therefore also shown in appendix 8.17.

The Bonferroni test shows that a significant relationship exists between the type of employee and flexibility. A significant relationship exists between the employees of internal services and knowledge workers, external services and the supportive departments.

### 5.4 The New World of Work and the customer

The background of Achmea described that the Board of Directors chooses its customers as the intention of the concept. The customers should not perceive any inconvenience regarding NWW. In the questionnaire, a few questions were asked about the customer perspective. In particular, it was measured whether the employees have the feeling that they serve the customers in a better way.

The client perspective was not treated as a moderating variable. Therefore, regression analysis was not possible in this case. The locations can only be compared on the mean. The ANOVA-test did not show significant results when the customers were treated as a dependent variable. However, a difference exists between the locations; Tilburg has the highest mean and Leeuwarden the least, but as mentioned this difference is not significant.

Finally, a test was conducted as to whether the customer perspective shows a difference based on the type of employee. This test also did not show a significant relationship.

## 6. Conclusions and recommendations

The last chapter involves the conclusions, recommendations and the limitations. The conclusion represents the key findings of both parts of this research: the virtual/physical dimension and the mental dimension. Both parts of the research will be discussed within the conclusion and an integration of both parts will be given afterwards. Furthermore, the recommendations will be provided, in order to answer the last sub question of this thesis:

*'Based on sub question 1 and 2, what advice can be given to the management of the Pension & Life division?'*

### 6.1 Conclusion

This research investigated whether the mental, physical and virtual dimension has an influence on the costs and benefits of NWW. The objective of this research was; *to get insight into the current status of the mental, physical and virtual dimensions in order to determine the extent to which the division could profit from the benefits of 'The New World of Work'*. The need for fulfilling this objective was derived from the Pension & Life division, which is part of Achmea.

The research question which was leading in this research is;

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*'Which influences do the dimensions mental, virtual and physical have on the cost and benefit analysis based on the New World of Work for the Pension & Life division of Achmea?'*

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Before a comprehensive and integrative advice about both the hard and soft side of NWW can be given, the main conclusions of sub question one and two will be given. The first sub question of this research was as follows; *what costs and benefits arise on the virtual and physical dimension after implementing 'The New World of Work?'*

#### 6.1.1 Virtual and physical dimension

The first sub question addressed the benefits of NWW. Before the benefits could be described, it was important to define NWW first. A direct translation from the Dutch to the English language is not applicable and therefore the NWW concept was unravelled in three components; flexibility, virtual teams and working at home.

The components of NWW lead to a number of significant benefits which can be subdivided in numerator and denominator management (Baane et al., 2010). Main difference between numerator and denominator management is that numerator focuses on cost-reduction and denominator management focuses on value creation (Baane et al., 2010).

The costs which arise after implementing NWW are also elaborated in the first part of the theoretical framework. The effect of NWW on the virtual and physical dimensions is positive and therefore it can be concluded that implementing NWW has a positive effect on the costs.

The virtual and physical dimension is operationalized in a number of cost centres. The physical dimension is operationalized in 1) ergonomical design, 2) renting and furnishing external working areas, 3) renovation costs and 4) implementation costs of advisors. The highest saving regarding this dimension can be realized on the cost centre *ergonomical design*. The assumption of 0,7 fte per work desk is made here. When this number is

taken into account, a saving of € 155.860,- per month can be realized. Put in another way: the benefits associated with the physical dimension are around €250,- per month per employee.

The virtual dimension was operationalized in 1) digitalizing, 2) system and process optimization, and 3) advanced ICT facilities. The basis of this calculation is based on three types of employees; knowledge, production and mobile worker. The needed facilities are inventoried and formed the basis of the calculation. To enable an employee to work time- and place independent, an investment is needed of €100,- per month. To take both dimensions into consideration, the Pension & Life division could save € 150,- per employee per month when NWW is fully implemented. The costs are robust; a number of assumptions had to be made in order to come to a cost calculation. Therefore caution is required with interpretation of these results.

### **6.1.2 Mental dimension**

The second part of the theoretical framework is based on the mental dimension. The mental dimension consists of the components: trust, social cohesion and result-oriented leadership. The three variables are treated as moderating variables. The sub question that belongs to the mental dimension is as follows; *what kinds of effect do the components trust, social cohesion and result-oriented leadership have on the relationship between 'The New World of Work' and the benefits?*

The regression analysis showed that trust has a significant relationship with performance. The more trust employees experience, the better their performance. Social cohesion is the second moderator variable which was tested. The more social cohesion employees experience, the better their performance. The same conclusion holds for the moderating variable result-oriented leadership, however both variables are not significant. Regressions were conducted to measure the effect of the moderating variables in the relationship between NWW and performance.

Another moderating variable was added and had the function of a control variable. The type of employee was tested with respect to the variables of the mental dimension. The variables trust in management and social cohesion do not have a significant difference between the types of employees. The variables trust in colleagues and result-oriented leadership has a significant relationship. However, further tests contradicted this difference. The three components of NWW were also tested in relation to the type of employee. The components working at home and virtual teams do not show a significant relationship. However, the component flexibility tested a significant relationship. Production workers do experience less flexibility than knowledge and mobile workers.

The other control variable is based on the location. The moderating variables social cohesion, result-oriented leadership and trust in colleagues do not show significant results. The component trust in leadership does, the Tilburg location has significantly more trust in their management than the Leeuwarden location. The Tilburg location has implemented NWW and it was researched whether this location differs on the mentioned variables between the locations of Apeldoorn and Leeuwarden.

The components of NWW were also tested in relation with the location. No significant differences exist between the separate components of NWW and the location.

### **6.1.3 Integration of the mental, virtual and physical dimension**

This research is more or less based on two sides. On the one hand the virtual and physical dimension is researched and on the other hand, the mental dimension. A calculation based on the physical dimension showed savings, based on 0,7fte per work desk. The virtual calculation showed investments, predominantly based on the IT-facilities.



The mental dimension can be regarded as the *soft side* of NWW. It is hard to say the amount of money which needs to be invested in this dimension. However, this research has proved that investments are needed; we found the following reasons for this. (1) The Apeldoorn CBM location needs mental support because on this location NWW does not deliver benefits. The Apeldoorn PWA location will move to Apeldoorn CBM in the spring of 2013. These employees do also need mental support before they are moving to the other location. (2) The same support holds for the Leeuwarden location. Investments need to take place for example on the Leeuwarden location to increase the level of trust. Possibilities in this case could be workshops or other interventions.

An important question is; does it still provide benefits for the Pension & Life division when the mental dimension also needs investments? Yes, is the answer because a lot of knowledge regarding NWW is already available. The Tilburg location has documentation and workshops available which can be unrolled on the other locations. The consultancy company Veldoer has also advised some locations; therefore a lot of sources and workshops are available. The project group (see point 3, Recommendations) is inter alia responsible for this part. It only brings costs in time.

This research has proved the importance of the mental help. A good comparison is the Tilburg and the Apeldoorn CBM location. The employees on the Tilburg location are accompanied on the mental part. Tilburg has a significant relationship between NWW and performance. The employees of the Apeldoorn CBM location did not get accompaniment in the transformation. This had resulted in the fact that NWW do not lead to benefits. So, on the short term it requires investments in the sense of time, however on the long term these investments are paid back.

#### **6.1.4 Methodology**

This research is conducted with the use of qualitative and quantitative research. Qualitative research was predominantly used to obtain the approval of the costs model. With the use of a number of interviews, the approval of the costs model is obtained.

Quantitative research was used to get insight into the mental dimension of the division. The whole division was part of the research and therefore 1129 respondents were involved. 49,2% of the research population took part, which is a very high response. Table 9 (page 44) shows the response per location, which is generally constant. However, due to the number of employees who work at the Amsterdam location, no conclusions can be formulated regarding this location.

#### **6.2 Recommendations**

For the past six months the researcher has investigated NWW within the Pension & Life division. The most important question for the division is; could the division profit from NWW? The answer is yes, based on the cost-benefit analysis and the statistical analysis, however the division needs to pay attention to a number of issues.

According to Damanpour (1987) innovations could be divided into technical innovations and administrative innovations. The NWW fits within the last category; it is based on changes in the social system of the organization (Damanpour, 1987).

The approach that belongs to this type of innovation is the following, which is also recommended to the management of the division Pension & Life;

1. The innovation starts at the top, an important role is reserved for the management of the Pension & Life division. The management is the *driving force* behind this innovation. Management has the function and attitude as a *figurehead*, and can be regarded as an ambassador of the new work

concept. The belief of the new work concept needs to start at the top. The management has to create a vision regarding NWW and carry out this vision.

At this moment, the topic of NWW entails a lot of discussion and predominantly based on the objective of NWW for Achmea. What is our aim? Do we want to be an attractive employer for the external world? Or do our customers profit from this new work concept? An unambiguous vision regarding NWW needs to be formulated.

In addition to creating a vision, setting goals is in this case also very important. Goals that are based on policies regarding NWW, implementation goals and goals based on the mental dimension. These goals give the middle management and employees control and grip.

2. After the management, where the more general principles of NWW are formulated, the middle management comes in the picture. Studies have indicated that in the case of an administrative innovation, a major role is reserved for the middle management (Shin et al., 2010). 'Managerial attitudes are an important indicator of a telework program success. The role of management as an effective influence for organizational change has been found in many studies' (Shin et al., 2012, page 93; Kwon & Zmud, 1987, Rogers, 1983; Kimberly & Evanisko, 1981). Middle management is important because they are the linking pin between management and the employees. Middle management has to carry out the philosophy of the management to the employees. This research confirms the importance of middle management because trust in management is significant in the relationship with performance.

Middle management cares for the facilities which the employees need to work time and place independent. Management is responsible for the policy regarding the facilities and middle management needs to arrange this with the employees. In addition, middle management needs to carry out *exemplary behaviour*. They can plan one day a week to work structurally at home. Exemplary behaviour can inspire employees to copy certain behaviour. Finally, middle management is also important because they have to adapt their leadership style from managing on presence to management on output. This research has confirmed that result-oriented leadership contribute in the relationship between NWW and performance, however it is not significant.

3. Management and middle-management needs to be supported by a project group, which already exists in the division. This project group consists of employees who represent a dimension. An important remark has to be placed here; no additional employees are appointed for this project. For example the current facility management takes part in this group and has the knowledge and expertise of the physical dimension. A HR-advisor and the researcher represent the mental dimension and they have expertise on this part. The project group contributes ideas in the form of an executive note and proposes these ideas by the management.

To give an example of the role of the project group; the project group has proposed to categorize the employees in knowledge workers, production workers and mobile workers. The project group has made a proposal for the management with a few scenarios' regarding the facilities which the different types of employees need. The management has approved the proposal and a small piece of policy regarding the facilities is made<sup>18</sup>.

4. The last recommendation is based on research. The management is recommended to measure periodically the attitude against NWW. It is recommended to measure the attitude in July next year.

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<sup>18</sup> The project group has decided to propose a policy regarding the facilities per type of employee based on the analysis of this research.

Based on this research, the Pension & Life division gets insight into the experience of their employees with NWW.

### **6.2.1 Future research**

Regarding the conclusion, discussion and limitations of this research, a few options for further research can be indicated. From a theoretical point of view, the cost and benefit model which was designed on the occasion of this research could be researched further.

The model is, in this case, used for an organization which operates in an insurance context. It could be further researched whether this model can be generalized for other branches with maybe an adaptation of the control variable.

In addition to the cost and benefit model, the role of communication as a possible variable could be further researched. During the discussion it was already mentioned that communication is an important dimension of NWW. Future research could study the importance of communication as a dimension of NWW.

### **6.3 Limitations**

In this research, there are a number of limitations which need to be identified. The Tilburg location in this research was regarded as blueprint. The location implemented NWW in 1996, and the employees are used to this new way of working. However, the other locations of Amsterdam, Apeldoorn PWA, Apeldoorn CBM and Leeuwarden are considered on the same level. The Apeldoorn location received advice from the consultancy company Veldhoen, and the Leeuwarden location did not receive advice but the locations are still treated on the same level.

In addition, the Amsterdam location is a very small location. Twelve employees of the division have Amsterdam as their fixed location. Only five employees from the Amsterdam location filled in the questionnaire. Due to the high differences in the number of employees with regard to the other locations it was decided to leave Amsterdam out of the scope of analysis. The location was taken into account during the cost calculation because costs are charged on the basis of divisions and not on locations. Therefore, it was difficult to filter out the costs for Amsterdam.

Another limitation is also based on the cost calculation of chapter 4. The new policy regarding working at home takes the transition costs of the Tilburg location into account. As was elaborated in that chapter the current policy of working at home from Tilburg is more luxurious than for the locations of Leeuwarden and Apeldoorn. It could therefore be the case that the current costs are higher when the new policy is definitively implemented, and after the transition period the costs decrease over time.

The last limitation of this research is based on the intention of NWW. The Board of Directors only gave the intention for implementing NWW which is the customer. The customer should not recognize any inconvenience while the division implements NWW. In the questionnaire, a few questions were based on this client perspective. However, every respondent answered these questions, including the respondents who do not fully work according to the new concept. These respondents filled in the questions based on future perspective. To measure effects based on the future is very risky and therefore these results have to be interpreted as expectations. The customer's perspective can only be measured in a reliable way during a 1 – measurement when NWW is fully implemented.

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www.achmeanet.nl  
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 www.telewerkforum.nl  
 www.socialresearchmethods.net  
 www.cbs.nl

## 7.3 List of Tables

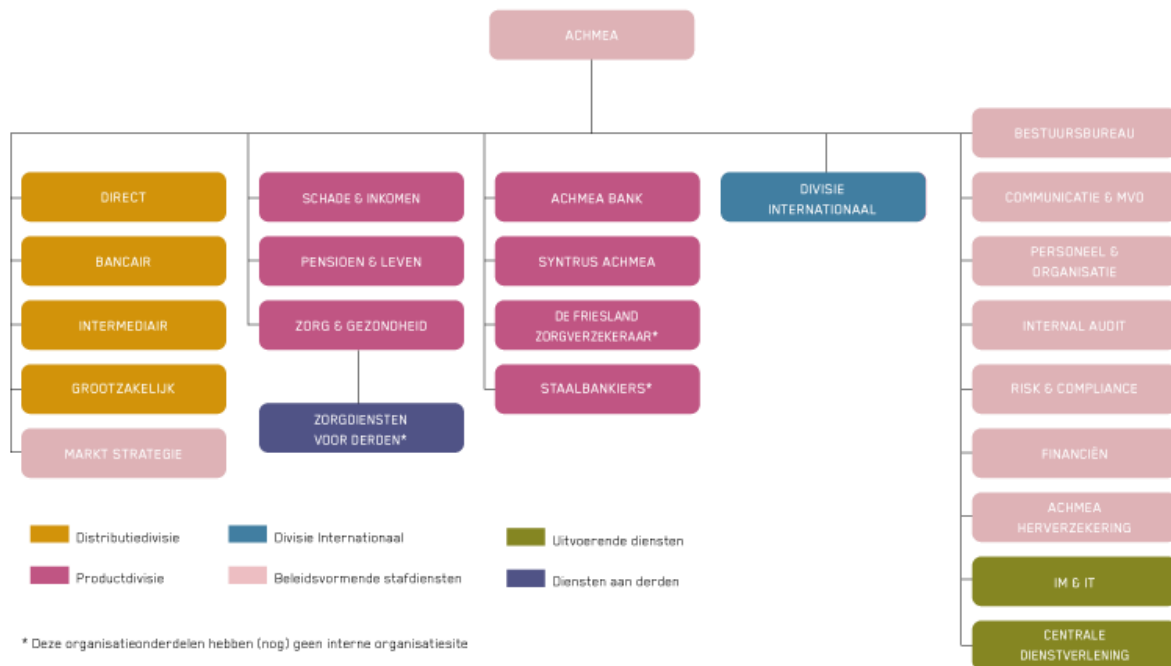
Table 1: Towards the new reality? (Child and McGrath, 2001)  
 Table 2: Definitions of flexitime and the operationalization  
 Table 3: Operationalization of the term flexitime and the expected benefits  
 Table 4: The different types of teams and the operationalization  
 Table 5: Operationalization of the term virtual teams and the expected benefits  
 Table 6: Definitions of working at home and the operationalization  
 Table 7: Operationalization of the term working at home and the expected benefits  
 Table 8: The cost centres and their costs and benefits (Van der Voordt, 2004; Yap, 1996)  
 Table 9: Response rate per location  
 Table 10: The different type of workers and their needed facilities when working at home  
 Table 11: The rate of the work desks per location per year/month  
 Table 12: Current costs regarding the fees  
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## 8. Appendices

### 8.1 Appendix 1: The Achmea organization



The division Pension & Life is one of the eleven divisions of Achmea. Achmea has different type of divisions; product, distribution, supportive and international divisions. The division Pension & Life can be characterized as a product division.

The core business of the division is to develop pension and life products. The developed products are sold by channel markets and by different distribution channels such as division Direct, division Bancair, division Intermediar and the division Large Businesses.

The division has 1245 employees and they are located over four locations; Amsterdam, Apeldoorn, Leeuwarden and Tilburg.

## 8.2 Appendix 2: Interview protocol

Field	Function	Location	Sub-topic	Questions
ICT	Project Manager	Leeuwarden	- Introduction	<ul style="list-style-type: none"> <li>- What is your function within Achmea and how did you arrive there?</li> <li>- How long are you working for Achmea?</li> </ul>
HRM	HR Advisor	Apeldoorn/ Tilburg		
HRM	HR Advisor	Tilburg		
Facility Management	Facility Manager	Apeldoorn		
Operations	Team manger operations	Tilburg		
			- Location	<ul style="list-style-type: none"> <li>- Are developments/issues on your location regarding NWW?</li> <li>- Can you indicate which investments are made regarding the virtual, physical and mental dimension?</li> </ul>
			- Cost and benefit analysis	<ul style="list-style-type: none"> <li>- Can you indicate to which extent the cost and benefit analysis is comprehensive on the virtual dimension?</li> <li>- Can you indicate to which extent the cost and benefit analysis is comprehensive on the physical dimension?</li> <li>- Can you indicate to which extent the theoretical model is applicable to the division Pension &amp; Life?</li> <li>- Do you have further additions/recommendations for the costs and benefits model?</li> </ul>

### 8.3 Appendix 3: Questionnaire

Beste collega,

Wat vind jij nou echt van Het Nieuwe Werken? Helpt het je efficiënter je werk te doen? Heeft de klant er baat bij?

'Het Nieuwe Werken', binnen onze divisie beter bekend als Vertrouwd Samen Werken (VSW) is gebaseerd op drie onderdelen; virtueel, fysiek en mentaal. Ik focus mij op het mentale aspect. Dat betekent dat het gaat om jou als medewerker en in het bijzonder om houding en gedrag.

De vragen die worden gesteld gaan over vertrouwen, resultaatgericht sturen en sociale samenhang. De begrippen zullen in de vragenlijst nader worden uitgelegd.

Het doel van dit onderzoek is de huidige stand van zaken in kaart te brengen betreffende het mentale aspect. Je kunt het zien als een 0-nulmeting en in de toekomst gaan we mogelijk een dergelijke vragenlijst vaker uitzetten.

De onderzoeksresultaten zullen worden gebruikt om de directie te adviseren met betrekking tot het mentale aspect.

De vragenlijst is anoniem en zal niet herleidbaar zijn naar medewerker.

Bij voorbaat dank,

Jorien Kraijenbrink

Ik studeer Human Resource Management aan de Universiteit Twente te Enschede. Op dit moment bevind ik mij in de eindfase van mijn studie; het schrijven van een scriptie. Met veel plezier werk ik hieraan namens de divisie Pensioen en Leven.

## Demografische gegevens

1. Ik ben een
  - man
  - vrouw
  
2. Leeftijd
  - 20 t/m 30
  - 31 t/m 40
  - 41 t/m 50
  - 51 en ouder
  
3. Mijn standplaats is de locatie
  - Leeuwarden
  - Apeldoorn van Malkenschoten
  - Apeldoorn PWA laan
  - Tilburg Spoorlaan
  - Amsterdam
  
4. Ik werk
  - 24 uur of minder
  - 25 t/m 35 uur
  - 36 uur of meer
  
5. Ik ben werkzaam binnen
  - Operations pensioen
  - Leven
  - Verzekeringstechniek & Productbeleid
  - Staf
  - Overig
  
6. Wat is je functie
  - Medewerker
  - Leidinggevende
  
7. Mijn functie valt binnen het type;
  - Kenniswerker, de werkzaamheden van een kenniswerker zijn gericht op het verzamelen, verwerken, verrijken en publiceren van informatie, bijvoorbeeld P&O.
  - Administratief personeel en call-agents, de werkzaamheden van deze functiegroepen kenmerkt zich door het repetitieve aard, bijvoorbeeld KCC
  - Ambulante medewerker, een ambulante werker is het merendeel van zijn of haar tijd onderweg en wordt daarbij gefaciliteerd in het uitvoeren van de werkzaamheden, bijvoorbeeld account managers
  
8. Functieniveau
  - A t/m D
  - E t/m H
  - I t/m K
  - Boven CAO
  
9. Aantal dienstjaren
  - 0 – 2
  - 3 – 8
  - 9 – 15
  - meer dan 15
  
10. Werk je weleens thuis?
  - Nooit, ga dan verder naar vraag 11
  - Incidenteel, ga dan verder met vraag 14
  - Structureel (bijvoorbeeld 1x per week of 1x per maand) ga dan verder met vraag 14

## Thuiswerken

11. Ik werk nooit thuis, de reden(en) waarom ik niet thuis werk:
  - Omdat ik het lastig vind om mijn eigen werk te organiseren.
  - Thuis beschik ik niet over voldoende faciliteiten om te werken.
  - Mijn werkzaamheden laten het niet toe om thuis te werken.
  - Ik wil niet dat mijn privé- en werkende leven door elkaar lopen, ik wil dit strikt scheiden.
  - Omdat mijn leidinggevende dit niet stimuleert.
  - Omdat ik het sociale contact mis dat ik wel op kantoor heb
  
12. Zou je graag willen thuiswerken?
  - Ja, ga verder naar vraag 13
  - Nee, ga verder met vraag 27

13. Hoeveel dagen zou je gemiddeld per maand willen thuiswerken? .....

Na het beantwoorden van vraag 13, ga dan verder met vraag 27.

#### **Vragen voor structurele/incidentele thuiswerkers**

14. Hoeveel dagen werk je gemiddeld per maand thuis? .....

15. Zou je graag meer willen thuiswerken? Ja/Nee

16. Hoeveel dagen zou je gemiddeld per maand willen thuiswerken? .....

17. Wat is de reden waarom je niet zoveel thuiswerkt als dat je zou willen?

- Mijn werkzaamheden laten het niet toe om meer thuis te werken
- Mijn leidinggevende stimuleert het niet om meer thuis te werken
- Omdat ik het sociale contact mis dat ik wel op kantoor heb
- Anders.....

18. Wanneer ik thuiswerk, dan werk ik geconcentreerder dan op kantoor

19. Wanneer ik thuiswerk, word ik gemakkelijk afgeleid

20. Wanneer ik thuiswerk, is er veel lawaai om mij heen

21. Wanneer ik thuis werk, ben ik productiever dan wanneer ik op kantoor werk

22. Mijn leidinggevende stimuleert mij om thuis te werken

23. Wanneer ik s' morgens opsta en mij niet volledig fit voel, maar wel de mogelijkheid heb om thuis te werken dan doe ik dat

24. Ik mis het sociale contact met mijn collega's als ik thuiswerk

25. Ik voel me geen onderdeel van het team als ik thuiswerk

26. Ik heb het gevoel dat wanneer ik thuis werk, ik altijd bereikbaar moet zijn

#### **Sociale samenhang**

*Wanneer collega's structureel of incidenteel thuiswerken of op een andere locatie werkzaam zijn, betekent dit dat collega's elkaar niet dagelijks fysiek zien, wat gevolgen kan hebben voor de sociale samenhang. Sociale samenhang betekent het behoren tot een sociale groep, bijvoorbeeld binnen een afdeling of een team. De volgende 6 vragen gaan over sociale samenhang.*

27. Er zijn veel persoonlijke conflicten tussen teamleden

28. Teamleden voelen zich trots om onderdeel te zijn van dit team

29. Elke teamlid voelt zich verantwoordelijk voor het behouden van en bescherming van ons team

30. Ons team kan worden beschouwd als hecht

31. Er is aantrekkingskracht tussen teamleden

32. Alle teamleden zijn van gelijke waarde binnen ons team

#### **Leidinggevende**

*Het Nieuwe Werken wordt ook wel tijd- en plaatsafhankelijke werken genoemd. Naast de verandering die dit met zich meebrengt voor werknemers, heeft dit natuurlijk ook gevolgen voor de leidinggevenden. De grootste verandering voor de leidinggevenden is het sturen op output/resultaat in plaats van sturen op controle. De volgende 8 vragen gaan over jou directe leidinggevende in het kader van VSW.*

33. Mijn leidinggevende stuurt mij aan op basis van de resultaten van mijn werk

34. Mijn leidinggevende en ik hebben dagelijks overleg over de resultaten van mijn werk

35. Als mijn werk maar op tijd af heb is mijn leidinggevende al tevreden

36. Ik maak periodiek afspraken met mijn leidinggevende over mijn resultaten

37. Mijn leidinggevende houdt de kwaliteit van mijn werk goed in de gaten

38. Mijn leidinggevende corrigeert mij vaak op mijn werkwijze

39. Mijn leidinggevende controleert mij op het volgen van de juiste procedures

40. Ik moet vaak rapporteren aan mijn leidinggevende over de stand van zaken van mijn werkzaamheden

### **Werken in teams op afstand**

*Op het moment dat jouw team over verschillende locaties verspreid werkt (denk hierbij ook aan projectteams) kan dit gevolgen hebben voor de communicatie, besluitvorming en de samenwerking. De volgende 5 vragen gaan over virtuele teams.*

41. Ben je werkzaam binnen een team waarbij een of meer teamleden een andere standplaats hebben?

- Ja, ga naar vraag 42
- Nee, ga naar vraag 48

42. In hoeveel virtuele teams (inclusief projectteams) neem jij deel?

- 1
- 2
- 3
- 4
- meer dan 4

43. Ondanks dat het team verspreid werkt, voel ik mij sterk verbonden met het team

44. Ondanks dat het team verspreid werkt, voel ik mezelf onderdeel van het team

45. Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaande communicatiemiddelen binnen het virtuele team ( nooit/eens per maand/eens per week/eens per dag/2-3 keer per dag/4-5 keer per dag).

- face – to face-
- telefoon
- conference call
- e – mail
- video conferencing
- communicator
- anders.....

46. Mijn teamleden voeren hun werkzaamheden toegewijd en professioneel uit

47. We hebben een goede onderlinge relatie binnen het team; we kunnen onze ideeën en gevoelens met elkaar delen

### **Vertrouwen tussen collega's**

*Vertrouwen is belangrijk, zowel in het privé leven als in de organisatie. Vertrouwen is ook een begrip dat erg breed is, en op veel verschillende manieren kan worden gedefinieerd. Binnen dit onderzoek zullen vragen worden gesteld over vertrouwen tussen medewerkers en vertrouwen tussen medewerkers en de leidinggevende. De volgende 9 vragen gaan over vertrouwen.*

48. Wanneer ik tegen problemen aanloop tijdens mijn werkzaamheden, dan zijn collega's bereid om mij hierbij te helpen

49. Ik kan mijn collega's vertrouwen dat zij ook doen dat ze zeggen

50. Ik kan mijn collega's vertrouwen, dat zij een helpende hand bieden wanneer ik dat nodig heb

51. Ik heb het volste vertrouwen in de vaardigheden van mijn collega's

52. De meeste van mijn naaste collega's werken door, ook al zijn directe leidinggevende niet in de buurt

53. Ik kan erop vertrouwen dat collega's mijn werkzaamheden niet bemoeilijken doordat zij slordig werk leveren

54. Ik heb vertrouwen in mijn collega's

55. Wanneer ik iets in vertrouwen deel met mijn collega's, heb ik het gevoel dat dit vertrouwelijk wordt behandeld

56. Ik geef mijn collega's feedback wanneer de situatie hierom vraagt

57. Ik heb het gevoel dat mijn collega's mij vertrouwen wanneer ik thuiswerk

### **Vertrouwen tussen werknemer en leidinggevende**

58. Het management is oprecht in de poging om het belang van de medewerker te verdedigen
59. Het management kan worden vertrouwd, dat zij verstandige beslissingen nemen voor de toekomst van de organisatie
60. Het management voert haar werkzaamheden efficiënt uit
61. Ik voel me er vrij zeker van dat de organisatie mij altijd op een eerlijke manier zal behandelen
62. Ik heb vertrouwen in mijn leidinggevende
63. Mijn leidinggevende heeft vertrouwen in mij
64. Wanneer ik iets in vertrouwen deel met mijn leidinggevende, heb ik het gevoel dat dit vertrouwelijk wordt behandeld
65. Ik geef mijn leidinggevende feedback wanneer de situatie hierom vraagt
66. Ik heb het gevoel dat mijn leidinggevende mij vertrouwt wanneer ik thuiswerk

### **Individuele prestaties**

67. Mijn werkresultaten voldoen over het algemeen aan alle relevante vereisten
68. Klanten (zowel intern als extern of werkgroepen) zijn altijd tevreden over het werk dat ik aflever
69. In vergelijking met mijn teamleden, zou ik mijn prestaties schatten binnen de top van het team
70. Ik ben een productieve werknemer
71. Ik werk erg efficiënt
72. Ik ben gelukkig met de kwaliteit van mijn werk die ik oplever

### **Flexibiliteit**

*Flexibiliteit kan worden uitgelegd op veel verschillende manieren. Tijdens dit onderzoek wordt met flexibiliteit bedoeld de mate waarin jij als werknemer de vrijheid hebt om je eigen werk te plannen binnen flexibele arbeidstijden. De volgende 3 vragen zijn gerelateerd aan flexibiliteit.*

73. Ik heb de vrijheid om te variëren met mijn werkschema
74. Ik heb de vrijheid om te werken waar ik wil, ook al is dit op kantoor of thuis
75. In totaliteit, als medewerker ervaar ik veel flexibiliteit

### **Vertrouwen tussen medewerker en klant**

*De Raad van Bestuur heeft als uitgangspositie binnen het Vertrouwd Samen Werken gekozen voor de klant, waarbij de klant hiervan geen hinder mag ondervinden. De laatste 4 vragen van deze enquête gaan over Vertrouwd Samen Werken in relatie tot de klant.*

76. Bij de indeling van mijn werkzaamheden denk ik na over de waarde toevoeging voor de klant
77. De relatie met mijn klanten (intern/extern) is beter geworden door Vertrouwd Samen Werken
78. Door Vertrouwd Samen Werken zal ik beter in staat zijn om mijn klanten (intern/extern) beter te bedienen

### **Algemeen**

79. Over het algemeen genomen, ben ik een
- voorstander van het Vertrouwd Samen Werken binnen Achmea omdat.....
  - tegenstander van het Vertrouwd Samen Werken binnen Achmea omdat.....



**8.4 Appendix 4: Current costs regarding the accommodation**

dP&L Accommodation costs January 2012																
Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	15,69	0,82855322	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
Apeldoorn CBM	1.469,58	128	138	166,48	0,76886112	11,4810938	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.368,12	€ 114,01	€ 3.769,79	€ 5.137,91	€ 428,16	€ 54.804,35
Apeldoorn PWA	7.315,21	411	392	394,87	1,04084889	17,7985645	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.546,49	€ 128,87	€ 6.606,08	€ 8.152,57	€ 679,38	€ 279.225,69
Leeuwarden	4.373,62	266	291	289,87	0,91765274	16,4421868	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.437,86	€ 119,82	€ 5.275,40	€ 6.713,26	€ 559,44	€ 148.810,64
Tilburg	3.414,77	233	294	296	0,78716216	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1051</b>	<b>1127</b>	<b>1162,91</b>	<b>0,90376727</b>	<b>15,9511032</b>										<b>€ 647.620,43</b>

dP&L Accommodation costs February 2012																
Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	15,69	0,82855322	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
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Tilburg	3.414,77	233	294	296	0,78716216	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1051</b>	<b>1127</b>	<b>1162,91</b>	<b>0,90376727</b>	<b>15,9511032</b>										<b>€ 647.620,43</b>

dP&L Accommodation costs March 2012																
Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	15,69	0,82855322	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
Apeldoorn CBM	1.469,58	128	138	166,48	0,76886112	11,4810938	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.368,12	€ 114,01	€ 3.769,79	€ 5.137,91	€ 428,16	€ 54.804,35
Apeldoorn PWA	7.315,21	411	392	394,87	1,04084889	17,7985645	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.546,49	€ 128,87	€ 6.606,08	€ 8.152,57	€ 679,38	€ 279.225,69
Leeuwarden	4.373,62	266	291	289,87	0,91765274	16,4421868	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.437,86	€ 119,82	€ 5.275,40	€ 6.713,26	€ 559,44	€ 148.810,64
Tilburg	3.414,77	233	294	296	0,78716216	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1051</b>	<b>1127</b>	<b>1162,91</b>	<b>0,90376727</b>	<b>15,9511032</b>										<b>€ 647.620,43</b>

dP&L Accommodation costs April 2012																
Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	15,69	0,82855322	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
Apeldoorn CBM	1.469,58	128	138	166,48	0,76886112	11,4810938	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.368,12	€ 114,01	€ 3.769,79	€ 5.137,91	€ 428,16	€ 54.804,35
Apeldoorn PWA	7.315,21	411	392	394,87	1,04084889	17,7985645	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.546,49	€ 128,87	€ 6.606,08	€ 8.152,57	€ 679,38	€ 279.225,69
Leeuwarden	4.373,62	266	291	289,87	0,91765274	16,4421868	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.437,86	€ 119,82	€ 5.275,40	€ 6.713,26	€ 559,44	€ 148.810,64
Tilburg	3.414,77	233	294	296	0,78716216	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1051</b>	<b>1127</b>	<b>1162,91</b>	<b>0,90376727</b>	<b>15,9511032</b>										<b>€ 647.620,43</b>

dP&L Accommodation costs May 2012																
Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	17,05	0,76246334	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
Apeldoorn CBM	1.469,58	128	138	165,58	0,77304022	11,4810938	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.368,12	€ 114,01	€ 3.769,79	€ 5.137,91	€ 428,16	€ 54.804,35
Apeldoorn PWA	7.315,21	412	392	412,13	0,99968457	17,7553641	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.550,26	€ 129,19	€ 6.606,08	€ 8.156,34	€ 679,69	€ 280.034,26
Leeuwarden	4.373,62	272	291	299,79	0,90730178	16,0794915	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.470,30	€ 122,52	€ 5.275,40	€ 6.745,69	€ 562,14	€ 152.902,42
Tilburg	3.414,77	233	294	300,56	0,77521959	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1058</b>	<b>1127</b>	<b>1195,11</b>	<b>0,88527416</b>	<b>15,8455666</b>										<b>€ 652.520,78</b>

dP&L Accommodation costs June 2012

Location	Square	No. work stations	No. emp.	fte	station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	13	12	17,05	0,76246334	14,7252737	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.704,08	€ 142,01	€ 7.162,62	€ 8.866,70	€ 738,89	€ 9.605,59
Apeldoorn CBM	1.469,58	128	138	165,58	0,77304022	11,4810938	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.368,12	€ 114,01	€ 3.769,79	€ 5.137,91	€ 428,16	€ 54.804,35
Apeldoorn PWA	7.315,21	412	392	412,13	0,99968457	17,7553641	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.550,26	€ 129,19	€ 6.606,08	€ 8.156,34	€ 679,69	€ 280.034,26
Leeuwarden	4.373,62	272	291	299,79	0,90730178	16,0794915	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.470,30	€ 122,52	€ 5.275,40	€ 6.745,69	€ 562,14	€ 152.902,42
Tilburg	3.414,77	233	294	300,56	0,77521959	14,6556519	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.799,96	€ 233,33	€ 5.191,84	€ 7.991,80	€ 665,98	€ 155.174,16
<b>Total</b>	<b>16.764,61</b>	<b>1058</b>	<b>1127</b>	<b>1195,11</b>	<b>0,88527416</b>	<b>15,8455666</b>										<b>€ 652.520,78</b>

### 8.5 Appendix 5: Future costs regarding the accommodation

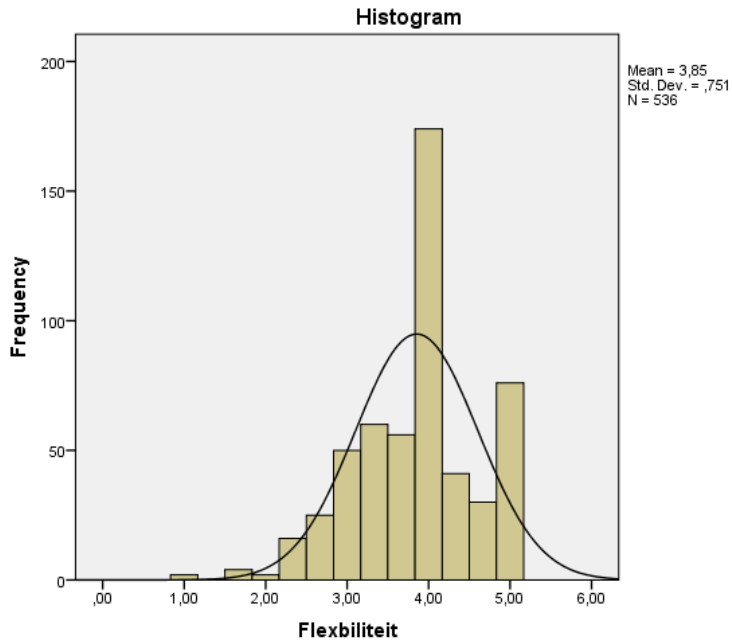
dP&L Accommodation costs January 2013																
Location	Square	No. work stations	No. emp.	fte	Station/fte	m2 /station	per station per year	per station per month	rent+square per year	rent+square per month	Total station/ per emp	Totaal station/ per emp per month	Total square/rent per employee	Total costs per emp/station	Total costs per emp/station per month	Total
Amsterdam	191,43	12	12	17,05	0,70381232	15,9523798	€ 1.573,00	€ 131,08	€ 449,00	€ 37,42	€ 1.573,00	€ 131,08	€ 7.162,62	€ 8.735,62	€ 727,97	€ 8.735,62
Apeldoorn CBM	1.469,58	117	138	165,58	0,70660708	12,5605128	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.250,54	€ 104,21	€ 3.769,79	€ 5.020,34	€ 418,36	€ 48.948,27
Apeldoorn PWA	7.315,21	290	392	412,13	0,70366147	25,2248621	€ 1.475,00	€ 122,92	€ 354,00	€ 29,50	€ 1.091,20	€ 90,93	€ 6.606,08	€ 7.697,28	€ 641,44	€ 186.017,64
Leeuwarden	4.373,62	210	291	299,79	0,70049034	20,8267699	€ 1.573,00	€ 131,08	€ 351,00	€ 29,25	€ 1.135,15	€ 94,60	€ 5.275,40	€ 6.410,55	€ 534,21	€ 112.184,69
Tilburg	3.414,77	211	294	300,56	0,70202289	16,1837294	€ 3.533,00	€ 294,42	€ 447,00	€ 37,25	€ 2.535,59	€ 211,30	€ 5.191,84	€ 7.727,43	€ 643,95	€ 135.873,94
<b>Total</b>	<b>16.764,61</b>	<b>840</b>	<b>1127</b>	<b>1195,11</b>	<b>0,70286417</b>	<b>19,9578685</b>										<b>€ 491.760,16</b>
															Per employee	€ 298,81

### 8.6 Appendix 6: Outlier analysis

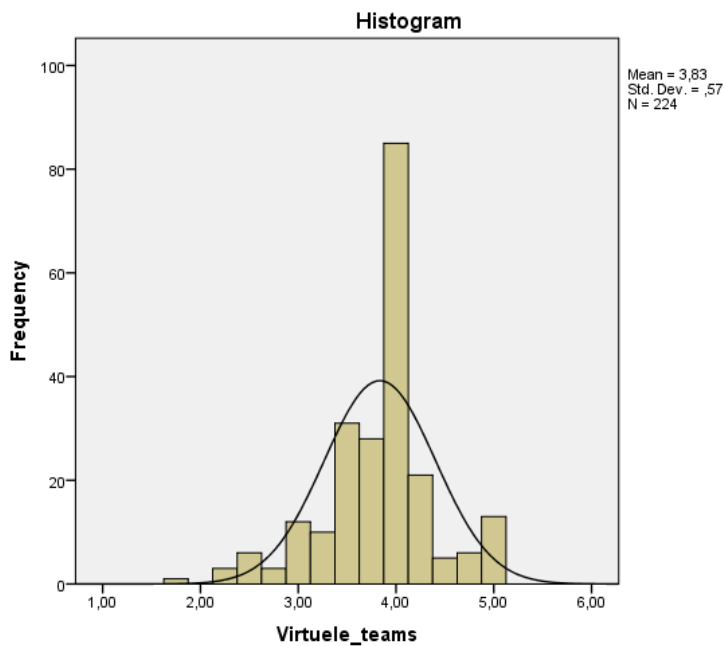
Outlier analysis with outliers	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Performance	3,912	3,8333	3,83	0,38159	0,484	0,107	1,101	0,214	2,83	5
Outlier analysis without outliers	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. Error of Kurtosis	Min.	Max.
Performance	3,9026	3,8333	-	0,38159	0,484	0,107	1,101	0,214	2,83	5

### 8.7 Appendix 7: Normal distribution

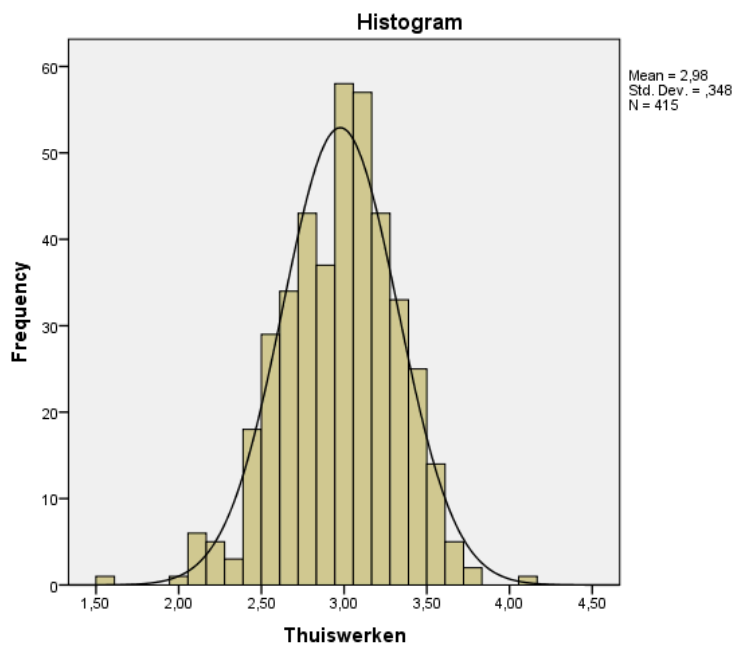
Independent variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max
Flexibility	3	3,8539	4	4	0,75132	-0,458	0,106	0,308	0,211	1	5



Independent variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max
Virtual Teams	10	3,8348	4	4	0,56975	-0,508	0,163	1,254	0,324	1,75	5

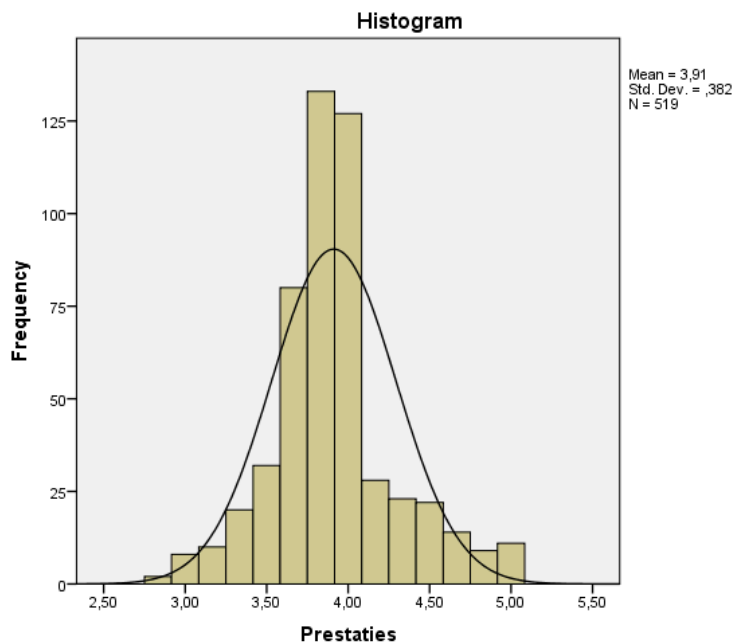


Independent variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Working at Home	9	2,9764	3	3	0,34758	-0,299	0,12	0,389	0,239	1,56	4,1



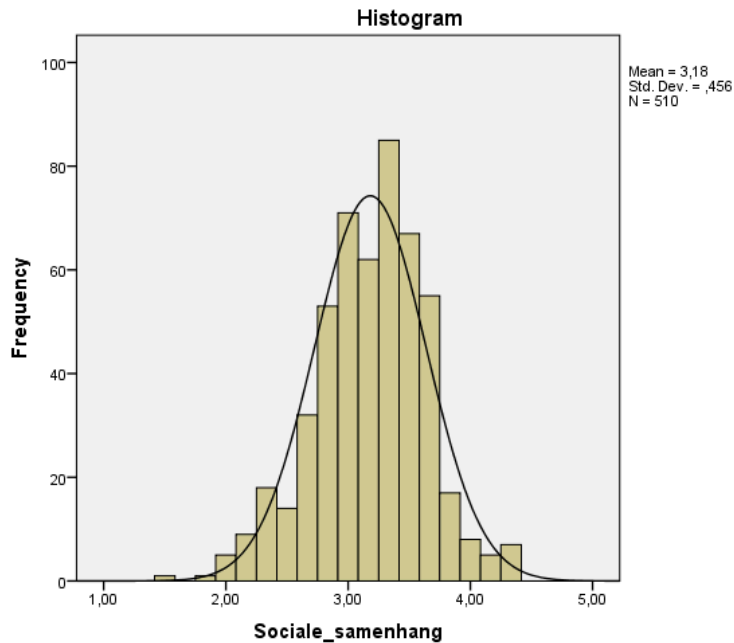
### 8.7.1 Appendix 7: Normal distribution of the dependent variables

Dependent variable	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Performance	6	3,912	3,8333	3,83	0,38159	0,484	0,107	1,101	0,214	2,83	5

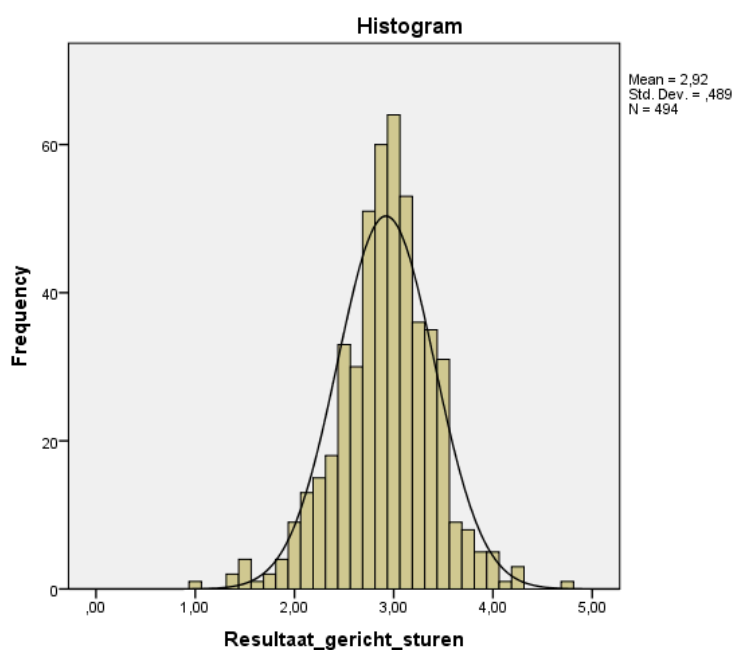


### 8.7.2 Appendix 7: Normal distribution of the moderating variables

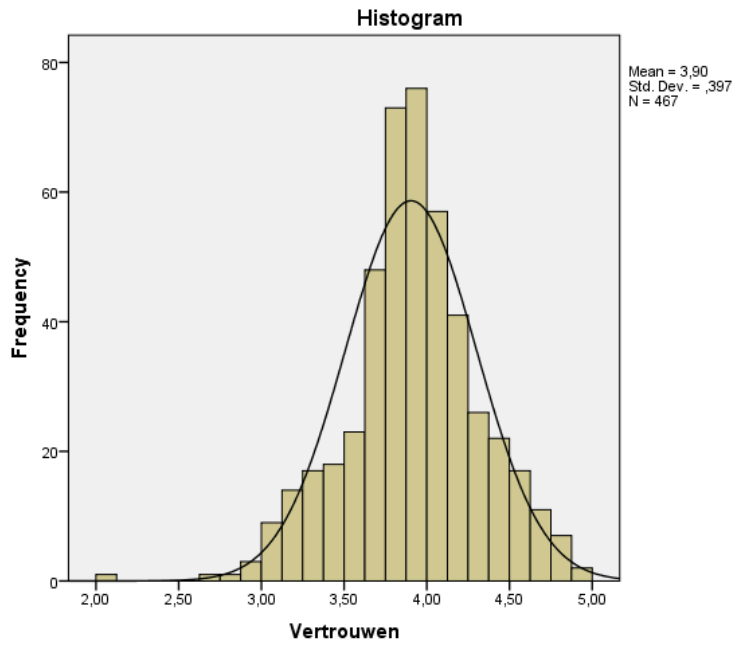
Moderating variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Social cohesion	6	3,1814	3,1667	3,33	0,45641	-0,289	0,108	0,349	0,216	1,5	4,33



Moderating variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Result-oriented leadership	8	2,9218	3	3	0,48916	-0,287	0,11	1,123	0,219	1	4,75



Moderating variables	Number of items measured	Mean	Median	Mode	Std.deviation	Skewness	Std.error of skewness	Kurtosis	Std. error of Kurtosis	Min.	Max.
Trust	19	3,9041	3,9	4	0,396691	-0,246	0,113	0,873	0,225	2,09	4,94





### 8.8 Appendix 8: Factor analysis

The factor analysis is based on measuring whether latent variables are reflected in the observed variables. To describe in an easier way, the aim of the factor analysis is to describe the correlation of the variables.

The precondition for the factor analysis is a large sample size. Tabachnick and Fidell (2001, page 588) advised; *'50 cases is very poor, 100 cases is poor, 200 cases is fair, 300 cases is good, 500 cases is very good'* (page 588). The dataset contains 555 respondents, which meets the category *very good*. Therefore, the precondition regarding the factor analysis is fulfilled.

In addition to the sample size, KMO and Bartlett's test indicate whether it is useful to conduct a factor analysis. The rule of thumb regarding that test; the value has to be between 0 and 1. The closer to 1, the better it is. The test indicated 0,666 which is a sufficient value for that test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,666
	Approx. Chi-Square	4836,791
Bartlett's Test of Sphericity	Df	1653
	Sig.	,000

Factor Analysis

	Factor														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wanneer ik thuiswerk, werk ik geconcentreerder dan op kantoor	,071	-,043	-,151	-,538	,481	-,160	,074	,015	-,130	,319	,297	-,026	,157	-,008	,033
Wanneer ik thuiswerk, word ik gemakkelijk afgeleid	-,161	-,161	-,054	,420	-,387	,145	-,208	,043	,126	-,168	-,041	,125	,280	,068	,155
Wanneer ik thuiswerk, is er veel lawaai om mij heen	-,364	-,049	-,210	,307	-,224	,167	,041	-,020	,220	-,085	-,006	,036	,128	,166	,032
Wanneer ik thuiswerk, ben ik productiever dan wanneer ik op kantoor werk	,224	-,028	-,092	-,531	,560	-,129	,025	-,016	-,113	,144	,152	,003	,179	-,041	,001
Er zijn veel persoonlijke conflicten tussen teamleden	-,580	-,129	-,208	,118	-,019	,113	,266	-,084	,083	,091	,094	,033	-,212	-,050	,099
Teamleden voelen zich trots om onderdeel te zijn van het team	,678	,062	,061	,090	-,010	,121	,059	,100	-,120	-,151	-,065	-,197	-,023	-,079	,230
Elk teamlid voelt zich verantwoordelijk voor het behoud van en bescherming van ons team	,607	-,035	,131	-,121	,025	,105	,000	,127	-,238	-,217	,077	-,273	-,012	,012	,274
Ons team kan worden beschouwd als hecht	,614	-,080	,218	-,087	-,079	,121	-,114	,164	-,123	-,090	-,056	-,113	,003	-,073	,207
Er is aantrekkingskracht tussen teamleden	,420	,058	,019	-,017	-,153	,119	,113	,202	-,132	-,015	,206	-,201	,022	,035	,126
Alle teamleden zijn van gelijke waarde binnen ons team	,552	-,070	,204	,019	,027	-,113	-,048	-,039	,008	-,091	,005	-,022	,037	-,048	-,256
Mijn leidinggevende stuurt mij aan op basis van behaalde resultaten binnen mijn werk	,429	,264	-,091	,025	,113	,068	,193	,250	-,084	-,265	,024	-,205	-,145	-,060	-,197
Mijn leidinggevende en ik hebben dagelijks overleg over de resultaten van mijn werk	-,052	-,054	,036	,125	,044	-,155	,334	,322	,229	-,022	,087	,122	-,023	,044	,073
Als ik mijn werk op tijd af heb is mijn leidinggevende tevreden	-,077	,056	,098	,032	,290	-,144	,130	-,044	,348	-,152	,136	,015	,115	-,231	,012
Ik maak periodiek afspraken met mijn leidinggevende over mijn resultaten	,308	,284	-,191	,053	,073	-,232	,144	,310	-,090	,091	-,259	-,178	-,145	,113	-,054
Mijn leidinggevende houdt de kwaliteit van mijn werk goed in de gaten	,206	,002	-,060	,096	,166	-,030	,128	,618	-,133	,051	-,386	,039	,182	,001	-,177
Mijn leidinggevende corrigeert mij vaak op mijn werkwijze	-,062	-,416	,194	,098	,377	-,087	-,024	,285	,098	,090	,004	,362	,014	,021	,239
Mijn leidinggevende controleert mij op het volgen van de juiste procedures	-,076	-,267	,156	,029	,322	-,027	-,022	,321	,099	-,008	-,158	,124	-,051	-,154	-,058
Ik moet vaak rapporteren aan mijn leidinggevende over de stand van zaken met betrekking tot mijn werkzaamheden	,006	-,166	,037	-,031	,320	,004	-,007	,258	,067	-,082	-,290	,117	-,206	,115	,168
Ondanks dat het team verspreid werkt, voel ik mij sterk verbonden met het team	,427	-,105	-,166	-,293	-,123	,609	-,046	,159	-,078	-,031	,190	,328	-,133	,146	-,097
Ondanks dat het team verspreid werkt, voel ik mezelf onderdeel van het team	,528	-,064	-,231	-,262	-,040	,386	-,081	,109	,022	-,157	,007	,295	-,152	-,047	-,051
Mijn teamleden voeren hun werkzaamheden toegewijd en professioneel uit	,538	-,040	,213	,121	,002	,040	,050	-,021	-,154	-,123	,122	,127	-,021	-,004	,025
We hebben een goede onderlinge relatie binnen het team; we kunnen onze ideeën en gevoelens met elkaar delen	,517	-,134	,136	-,258	-,255	,286	-,147	-,030	-,247	,064	-,093	,124	,077	-,178	-,242
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; face to face contact	,142	,092	-,171	-,111	-,308	,131	,052	,122	-,161	,192	-,060	,062	,312	,107	,039
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; telefoon	,264	-,063	-,035	-,174	,017	,147	-,108	,229	,114	-,046	,296	,090	,082	,106	,032
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; conference call	-,207	,713	,642	-,045	-,007	,042	-,020	,041	,020	,075	,049	,056	-,043	,059	,002
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; e-mail	-,189	,716	,648	-,048	-,031	,068	-,025	,066	,009	,071	,018	,052	,008	,042	,012
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; video conferencing	-,210	,725	,632	-,032	-,007	,059	-,029	,040	,005	,062	-,012	,040	-,025	,039	,016
Kun je aangeven in welke mate gebruik wordt gemaakt van onderstaand communicatiemiddel binnen het virtuele team; communicator	-,218	,685	,645	-,088	-,032	,084	-,067	,034	,039	,063	-,025	,080	,039	,037	,036
Wanneer ik tegen problemen aanloop tijdens mijn werkzaamheden, dan zijn collega's bereid om mij hierbij te helpen	,594	-,108	-,010	-,066	-,343	-,058	-,158	-,016	,039	,253	,023	-,052	-,018	-,140	,188
Ik kan mijn collega's vertrouwen, dat zij ook doen wat ze zeggen	,576	-,234	,228	-,092	-,052	-,072	-,128	-,148	,246	-,066	-,087	-,003	-,007	-,099	-,016

Ik kan mijn collega's vertrouwen, dat zij een helpende hand bieden wanneer ik dat nodig heb	,696	-,163	,116	,008	-,327	-,115	-,119	,028	,127	,267	-,040	-,078	,070	-,041	-,068
Ik heb het volste vertrouwen in de vaardigheden van mijn collega's	,601	-,356	,431	,060	,121	-,183	,002	-,058	-,040	-,006	,015	,016	,123	-,014	,017
De meeste van mijn naaste collega's werken door, ook al is de directe leidinggevende niet in de buurt	,630	,076	,082	-,036	,154	-,211	-,080	-,223	-,020	-,266	,000	,150	,047	,210	-,009
Ik kan erop vertrouwen dat collega's mijn werkzaamheden niet bemoeilijken doordat zij slordig werk leveren	,680	-,293	,181	-,035	-,014	-,146	,040	-,132	,077	-,127	-,105	-,096	,081	,200	-,029
Ik heb vertrouwen in mijn collega's	,715	-,365	,361	,079	-,002	-,110	-,135	-,026	,208	,090	-,110	,082	,066	,056	,000
Wanneer ik iets in vertrouwen deel met mijn collega's, heb ik het gevoel dat dit vertrouwelijk wordt behandeld	,619	-,198	,205	-,019	-,089	-,102	,061	-,005	,144	-,001	,075	,026	-,059	,045	-,055
Ik geef mijn collega's feedback wanneer de situatie hierom vraagt	,542	-,058	-,055	-,013	,100	,071	-,111	,053	,340	,325	,000	-,212	-,172	,180	-,022
Ik heb het gevoel dat mijn collega's mij vertrouwen wanneer ik thuiswerk	,731	-,034	,219	,092	-,013	-,076	-,082	,047	,067	,000	,151	,022	-,187	,052	-,066
Het management is oprecht in de poging om het belang van de medewerker te verdedigen	,201	-,350	,214	,440	,128	,207	,378	-,035	-,164	,255	,170	-,041	,073	,094	-,007
Het management kan worden vertrouwd, dat zij verstandige beslissingen nemen voor de toekomst van de organisatie	,105	-,258	,238	,544	,248	,264	,251	-,117	-,090	,245	,134	-,005	-,148	,076	-,099
Het management voert haar werkzaamheden efficiënt uit	,117	-,261	,337	,501	,164	,329	,187	-,116	-,115	,102	-,046	-,084	,047	-,026	-,048
Ik heb vertrouwen in mijn leidinggevende	,570	,369	-,182	,019	-,182	-,213	,474	-,027	-,057	-,090	,042	,147	,135	-,020	,048
Mijn leidinggevende heeft vertrouwen in mij	,515	,376	-,243	,083	-,233	-,135	,433	,031	,127	,042	,030	,161	-,012	-,175	-,028
Wanneer ik iets in vertrouwen deel met mijn leidinggevende, heb ik het gevoel dat dit vertrouwelijk wordt behandeld	,517	,281	-,132	,155	-,161	-,186	,358	-,083	-,028	-,007	,050	,135	,050	,078	-,058
Ik geef mijn leidinggevende feedback, wanneer de situatie hierom vraagt	,463	,209	-,132	-,058	-,169	,137	,027	,108	,238	,400	-,045	,021	-,001	-,106	,047
Ik heb het gevoel dat mijn leidinggevende mij vertrouwt wanneer ik thuiswerk	,635	,338	-,198	,100	-,129	-,250	,136	-,039	,028	-,110	,093	,119	-,174	-,082	,086
Mijn werkresultaten voldoen over het algemeen aan alle relevante vereisten	,364	,224	-,198	-,116	,128	,203	-,062	-,268	,117	-,032	-,090	-,163	-,127	,042	-,035
Klanten (intern/extern/werkgroepen) zijn altijd tevreden over het werk dat ik aflever	,273	,104	,014	-,104	,239	,173	,031	-,090	,433	-,196	,104	-,113	,131	,143	-,093
In vergelijking met mijn teamleden zou ik mijn prestaties schatten binnen de top van het team	-,012	,294	-,214	-,095	,104	,320	,128	,245	,322	-,087	,084	-,166	,156	,025	-,020
Ik ben een productieve werknemer	,254	,244	-,183	,024	,199	,283	,138	-,195	,068	,061	-,255	-,051	,251	,018	,020
Ik werk erg efficiënt	,199	-,001	,192	-,013	,252	,301	,201	-,311	,056	-,053	-,146	,083	,019	-,431	,082
Ik ben gelukkig met de kwaliteit van mijn werk dat ik oplever	,347	,284	-,229	-,084	,238	,325	,070	-,119	,150	,089	-,215	-,038	-,018	,015	,132
Ik heb de vrijheid om te variëren met mijn werkschema	,276	,279	-,252	,381	,113	-,017	-,400	,089	,048	,068	,036	,081	-,002	-,196	-,014
Ik heb de vrijheid om te werken waar ik wil, ook al is dit op kantoor of thuis	,216	,321	-,230	,509	,183	-,096	-,376	,193	,000	,016	,151	-,069	,078	-,101	-,105
In totaliteit, als medewerker ervaar ik veel flexibiliteit	,328	,375	-,297	,500	,200	,016	-,393	,093	-,074	,067	,237	-,025	,028	-,076	,047
Ik ervaar veel zelfstandigheid binnen mijn werk	,495	,303	-,232	,116	,252	-,015	-,078	-,300	-,183	,046	-,181	,138	-,033	,160	,099
Mijn werk geeft mij de zelfstandigheid en vrijheid met betrekking tot hoe ik mijn werkzaamheden uitvoer	,368	,380	-,317	,207	,382	-,065	-,182	-,234	-,143	,017	-,069	,198	,022	,142	,011
Mijn functie geeft mij geen mogelijkheid om werkzaamheden uit te voeren naar persoonlijk inzicht	-,079	-,057	,181	,157	,227	,164	,009	,097	-,058	-,361	,093	-,055	,109	-,052	-,048

Extraction method: Principal Axis Factoring

### 8.9 Appendix 9: Cronbach's Alpha

The questionnaire represents a number of constructs. For example, the construct flexibility consists of three questions. The constructs are reliable if they measure what they intend to measure. The first construct which is measured with Cronbach's Alpha is *flexibility*. The Cronbach's Alpha of this construct is  $\alpha = 0,817$  which can be regarded as good.

The second construct is *virtual teams*, which is measured with the use of ten items. The ten items form together a Cronbach's Alpha of 0,815 and this can also be regarded as good.

The last construct and also the last independent variable is *working at home*. The dataset was a combination of existing datasets and own questions. The dataset contained nine questions and after measuring the Cronbach's Alpha, the dataset was not reliable enough. After deleting own questions, the Cronbach's Alpha raise to  $\alpha = 0,754$ . Therefore is decided to not take into consideration the own question.

Reliability statistics of the independent variables	Number of items measured	Cronbach's Alpha
Flexibility	3	0,817
Virtual teams	10	0,815
Working at home	4	0,754

The construct *performance* contains six items which are based on an existing dataset. After measuring the Cronbach's Alpha,  $\alpha = 0,766$ . This alpha can be regarded as acceptable, and therefore no questions have to be deleted.

Reliability statistics of the dependent variable	Number of items measured	Cronbach's Alpha
Performance	6	0,766

The first moderating variable is *social cohesion*. The construct contains five items and after measuring the items a Cronbach's Alpha of  $\alpha = 0,795$  was the result. The alpha can be regarded as acceptable.

Eight questions represent the construct *result-oriented leadership*. They form together a Cronbach's Alpha of  $\alpha = 0,685$ . It is tested whether the Cronbach's Alpha would increase when some questions were deleted. However, several tests showed that the Cronbach's Alpha decreases when some questions were deleted. Therefore is decided to keep the actual dataset with an alpha which is close to acceptable.

The construct *trust* is divided in two separate constructs; *trust in colleagues* and *trust in management*. The first construct contains eight question with  $\alpha = 0,787$  which is acceptable. The second construct; trust in management contains ten items. The ten items were a mix of an existing dataset and own questions. In the first instance, the Cronbach's Alpha was too low. However, after deleting one own question, the alpha raise to  $\alpha = 0,899$ .

Reliability statistics of the moderating variables	Number of items measured	Cronbach's Alpha
Social cohesion	5	0,795
Result-oriented leadership	8	0,685
Trust in colleagues	8	0,787
Trust in management	10	0,899

The control variables is also taken into account for the reliability analysis. The original construct contained of three questions. The first alpha was  $\alpha = 0,398$ . That alpha was far to low and therefore is decided to delete one questions and increase the alpha. One of the questions is deleted and based on two items  $\alpha = 0,850$ .

Reliability statistics of the control variable	Number of items measured	Cronbach's Alpha
Control variable	2	0,850

### 8.10 Appendix 10: Frequency analysis per control variable

<b>Working at home</b>	N	N	Mean	Std.deviation
Amsterdam	5	4	3,625	0,41667
Apeldoorn CBM	45	35	3,9381	0,40237
Apeldoorn PWA	239	181	3,8978	0,34313
Leeuwarden	128	92	3,942	0,39335
Tilburg	138	109	3,9358	0,39798
<b>Virtual teams</b>	N	N	Mean	Std.deviation
Amsterdam	5	4	3,625	0,41667
Apeldoorn CBM	45	21	3,8571	0,42258
Apeldoorn PWA	239	102	3,9036	0,37703
Leeuwarden	128	35	3,819	0,24041
Tilburg	138	50	3,89	0,38334
<b>Flexibility</b>	N	N	Mean	Std.deviation
Amsterdam	5	5	3,6	0,36515
Apeldoorn CBM	45	40	3,875	0,43486
Apeldoorn PWA	239	222	3,9137	0,35584
Leeuwarden	128	112	3,9033	0,4129
Tilburg	138	125	3,932	0,38747
<b>NWW</b>	N	N	Mean	Std.deviation
Amsterdam	5	4	3,625	0,41667
Apeldoorn CBM	45	18	3,9167	0,39295
Apeldoorn PWA	239	90	3,9093	0,38068
Leeuwarden	128	31	3,8226	0,23545
Tilburg	138	47	3,8901	0,39513

Social cohesion	N	N	Mean	Std.deviation
Amsterdam	5	4	3,5417	0,39382
Apeldoorn CBM	45	40	3,8792	0,43525
Apeldoorn PWA	239	201	3,9303	0,34175
Leeuwarden	128	111	3,9114	0,42153
Tilburg	138	123	3,9417	0,38646
Result-oriented leadership	N	N	Mean	Std.deviation
Amsterdam	5	5	3,6	0,36515
Apeldoorn CBM	45	43	3,876	0,42116
Apeldoorn PWA	239	202	3,9002	0,35081
Leeuwarden	128	101	3,9257	0,42129
Tilburg	138	117	3,9288	0,37544
Trust in colleagues	N	N	Mean	Std.deviation
Amsterdam	5	5	3,6	0,36515
Apeldoorn CBM	45	42	3,8611	0,40645
Apeldoorn PWA	239	202	3,9051	0,35297
Leeuwarden	128	107	3,8956	0,41432
Tilburg	138	120	3,9458	0,38962
Trust in management	N	N	Mean	Std.deviation
Amsterdam	5	5	3,6	0,36515
Apeldoorn CBM	45	43	3,8798	0,41995
Apeldoorn PWA	239	207	3,9138	0,34831
Leeuwarden	128	107	3,9159	0,40591
Tilburg	138	118	3,9266	0,38523

Knowledge workers	Mean	St. deviation
<b>Independent variables</b>		
Flexibility	4,0024	0,69133
Working at home	4,028	0,63517
Virtual teams	3,8056	0,54697
<b>Dependent variable</b>		
Performance	3,8998	0,37756
<b>Moderating variables</b>		
Social cohesion	3,4935	0,61953
Result-oriented leadership	3,1419	0,27173
Trust in management	3,8362	0,44601
Trust in colleagues	4,1101	0,47167

Mobile workers	Mean	St. deviation
<b>Independent variables</b>		
Flexibility	4,2407	0,5808
Working at home	4,2206	0,47502
Virtual teams	4,0357	0,17252
<b>Dependent variable</b>		
Performance	4,0686	0,37295
<b>Moderating variables</b>		
Social cohesion	3,6078	0,60651
Result-oriented leadership	3,2206	0,22763
Trust in management	3,7132	0,37957
Trust in colleagues	4,0313	0,47989

Production workers (Administration/call centres)	Mean	St. deviation
<b>Independent variables</b>		
Flexibility	3,5848	0,74379
Working at home	4,061	0,62955
Virtual teams	3,7586	0,63204
<b>Dependent variable</b>		
Performance	3,9351	0,38836
<b>Moderating variables</b>		
Social cohesion	3,631	0,54855
Result-oriented leadership	3,0957	0,25291
Trust in management	3,7087	0,41917
Trust in colleagues	3,9764	0,45876

Production workers (IT/functional management)	Mean	St. deviation
<b>Independent variables</b>		
Flexibility	4,0763	0,70659
Working at home	3,9743	0,69541
Virtual teams	3,8764	0,59367
<b>Dependent variable</b>		
Performance	3,8695	0,37223
<b>Moderating variables</b>		
Social cohesion	3,6052	0,58296
Result-oriented leadership	3,169	0,2876
Trust in management	3,7368	0,43319
Trust in colleagues	4,1028	0,4965

### 8.11 Appendix 11: Regression analysis

#### Test of Homogeneity of Variances

Performance

Levene Statistic	df1	df2	Sig.
,662	4	514	,619

#### ANOVA<sup>a</sup>

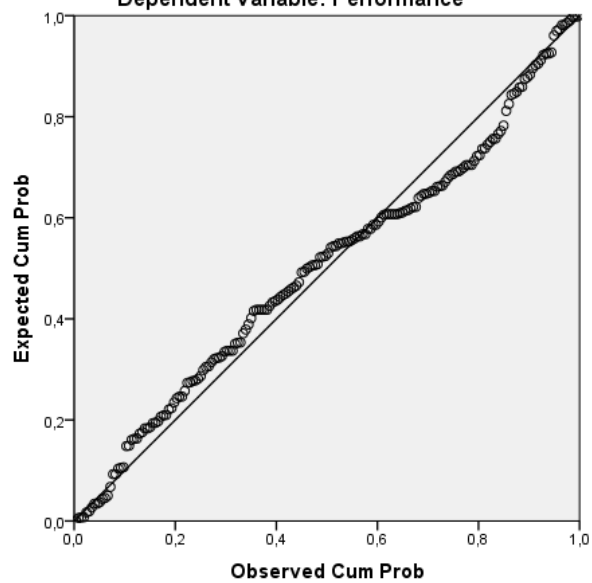
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2,846	3	,949	7,839	,000 <sup>b</sup>
1 Residual	22,507	186	,121		
Total	25,352	189			

a. Dependent Variable: Performance

b. Predictors: (Constant), Thuiswerken, Flexibiliteit, Virtuele teams

#### Normal P-P Plot of Regression Standardized Residual

Dependent Variable: Performance





**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3,468	1	3,468	26,204	,000 <sup>b</sup>
Residual	55,455	419	,132		
Total	58,923	420			

a. Dependent Variable: Performance

b. Predictors: (Constant), Thuiswerken

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	2,567	1	2,567	21,133	,000 <sup>b</sup>
Residual	25,509	210	,121		
Total	28,076	211			

a. Dependent Variable: Performance

b. Predictors: (Constant), Virtuele teams

**ANOVA<sup>a</sup>**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1,895	1	1,895	13,190	,000 <sup>b</sup>
Residual	72,136	502	,144		
Total	74,031	503			

a. Dependent Variable: Performance

b. Predictors: (Constant), Flexibiliteit

## 8.12 Appendix 12: Regression analysis per location

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,974	3	,325	2,752	,082 <sup>c</sup>
	Residual	1,651	14	,118		
	Total	2,625	17			

a. Dependent Variable: Performance

b. Selecting only cases for which Welke standplaats heb je? = Apeldoorn van Malkenschoten

c. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,757	3	,586	4,520	,005 <sup>c</sup>
	Residual	11,141	86	,130		
	Total	12,898	89			

a. Dependent Variable: Performance

b. Selecting only cases for which Welke standplaats heb je? = Apeldoorn PWA laan

c. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,423	3	,141	3,073	,045 <sup>c</sup>
	Residual	1,240	27	,046		
	Total	1,663	30			

a. Dependent Variable: Performance

b. Selecting only cases for which Welke standplaats heb je? = Leeuwarden

c. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams

**ANOVA<sup>a,b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,654	3	,551	4,287	,010 <sup>c</sup>
	Residual	5,528	43	,129		
	Total	7,182	46			

a. Dependent Variable: Performance

b. Selecting only cases for which Welke standplaats heb je? = Tilburg Spoorlaan

c. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams

### 8.13 Appendix 13: Correlation analysis

		Correlations			
		Flexibiliteit	Performance	Thuiswerken	Virtuele teams
Flexibiliteit	Pearson Correlation	1	,160**	,028	,168*
	Sig. (2-tailed)		,000	,562	,012
	N	536	504	431	220
Performance	Pearson Correlation	,160**	1	,243**	,302**
	Sig. (2-tailed)	,000		,000	,000
	N	504	519	421	212
Thuiswerken	Pearson Correlation	,028	,243**	1	,169*
	Sig. (2-tailed)	,562	,000		,016
	N	431	421	446	201
Virtuele teams	Pearson Correlation	,168*	,302**	,169*	1
	Sig. (2-tailed)	,012	,000	,016	
	N	220	212	201	224

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### 8.14 Appendix 14: Regression analysis type of employee

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,846	3	,949	7,839	,000 <sup>b</sup>
	Residual	22,507	186	,121		
	Total	25,352	189			
2	Regression	2,867	4	,717	5,896	,000 <sup>c</sup>
	Residual	22,486	185	,122		
	Total	25,352	189			

a. Dependent Variable: Performance

b. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams

c. Predictors: (Constant), Flexibiliteit, Thuiswerken, Virtueleteams, Binnen welk type valt jouw functie?

### 8.15 Appendix 15: Regression analysis with moderating variables

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,871	,027		143,234	,000
HetNieuweWerken	,267	,070	,279	3,812	,000
Resultaatgerichtsturen	,171	,099	,128	1,727	,086
HetNieuweWerken - Resultaatgerichtsturen	,278	,258	,079	1,079	,282

a. Dependent Variable: Performance

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,903	,028		138,638	,000
HetNieuweWerken	,217	,075	,240	2,900	,004
Sociale cohesie	,090	,053	,139	1,686	,094
HetNieuweWerken - Sociale cohesie	-,042	,097	-,032	-,438	,662

a. Dependent Variable: Performance

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,875	,029		135,410	,000
HetNieuweWerken	,193	,076	,209	2,535	,012
Vertrouwen	,244	,080	,257	3,070	,003
HetNieuweWerken - Vertrouwen	-,114	,154	-,054	-,738	,462

a. Dependent Variable: Performance

### 8.16 Appendix 16: Regression analysis with moderating variables per location

#### ANOVA

Sociale cohesie

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,361	4	,340	1,014	,400
Within Groups	169,555	505	,336		
Total	170,917	509			

#### ANOVA

Resultaatgericht sturen

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,295	4	,074	1,019	,397
Within Groups	35,347	489	,072		
Total	35,641	493			

#### ANOVA

Vertrouwen in collega's

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,515	4	,129	,565	,688
Within Groups	113,461	498	,228		
Total	113,976	502			

#### ANOVA

Vertrouwen in de leidinggevende

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,057	4	,514	2,811	,025
Within Groups	91,677	501	,183		
Total	93,734	505			

### Multiple Comparisons

Dependent Variable: Vertrouwen in de leidinggevende

Bonferroni

(I) Welke standplaats heb je?	(J) Welke standplaats heb je?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Amsterdam	Apeldoorn van Malkenschoten	-,02443	,20188	1,000	-,5936	,5448
	Apeldoorn PWA laan	-,04132	,19351	1,000	-,5869	,5043
	Leeuwarden	,03261	,19542	1,000	-,5184	,5836
	Tilburg Spoorlaan	-,14821	,19506	1,000	-,6982	,4018
Apeldoorn van Malkenschoten	Amsterdam	,02443	,20188	1,000	-,5448	,5936
	Apeldoorn PWA laan	-,01689	,07075	1,000	-,2164	,1826
	Leeuwarden	,05704	,07583	1,000	-,1568	,2708
	Tilburg Spoorlaan	-,12378	,07491	,991	-,3350	,0874
Apeldoorn PWA laan	Amsterdam	,04132	,19351	1,000	-,5043	,5869
	Apeldoorn van Malkenschoten	,01689	,07075	1,000	-,1826	,2164
	Leeuwarden	,07393	,04938	1,000	-,0653	,2132
	Tilburg Spoorlaan	-,10689	,04795	,262	-,2421	,0283
Leeuwarden	Amsterdam	-,03261	,19542	1,000	-,5836	,5184
	Apeldoorn van Malkenschoten	-,05704	,07583	1,000	-,2708	,1568
	Apeldoorn PWA laan	-,07393	,04938	1,000	-,2132	,0653
	Tilburg Spoorlaan	-,18082*	,05517	,011	-,3364	-,0253
Tilburg Spoorlaan	Amsterdam	,14821	,19506	1,000	-,4018	,6982
	Apeldoorn van Malkenschoten	,12378	,07491	,991	-,0874	,3350
	Apeldoorn PWA laan	,10689	,04795	,262	-,0283	,2421
	Leeuwarden	,18082*	,05517	,011	,0253	,3364

\*. The mean difference is significant at the 0.05 level.

### 8.16.1 Appendix 16: Regression analysis with independent variables per location

#### ANOVA

Thuiswerken

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,451	4	,113	,268	,899
Within Groups	185,859	441	,421		
Total	186,311	445			

#### ANOVA

Virtuele teams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,677	4	,169	,517	,723
Within Groups	71,712	219	,327		
Total	72,388	223			

#### ANOVA

Flexibiliteit

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,090	4	,773	1,372	,242
Within Groups	298,906	531	,563		
Total	301,996	535			

### 8.16.2 Appendix 16: Regression analysis with dependent variables per location

#### ANOVA

Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,601	4	,150	1,032	,390
Within Groups	74,826	514	,146		
Total	75,426	518			



### 8.17 Appendix 17: Regression analysis with moderating variables per type of employee

#### ANOVA

Sociale cohesie

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,605	3	,535	1,599	,189
Within Groups	169,312	506	,335		
Total	170,917	509			

#### ANOVA

Vertrouwen leidinggevende

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,378	3	,459	2,498	,059
Within Groups	92,356	502	,184		
Total	93,734	505			

#### ANOVA

Vertrouwen in collega's

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,036	3	,679	3,025	,029
Within Groups	111,940	499	,224		
Total	113,976	502			

#### ANOVA

Resultaatgericht sturen

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,615	3	,205	2,870	,036
Within Groups	35,026	490	,071		
Total	35,641	493			

### Multiple Comparisons

Dependent Variable: Resultaatgerichtsturen

Bonferroni

(I) Binnen welk type valt jouw functie?	(J) Binnen welk type valt jouw functie?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Stafmedewerkers; bijvoorbeeld P&O, Financiën & Risico e.d.	Commerciële binnendienst	,04617	,03016	,758	-,0337	,1261
	Commerciële buitendienst	-,07872	,06908	1,000	-,2617	,1043
	Ondersteunende diensten	-,02715	,03272	1,000	-,1138	,0595
Commerciële binnendienst;	Stafmedewerkers	-,04617	,03016	,758	-,1261	,0337
	Commerciële buitendienst	-,12489	,06743	,388	-,3035	,0537
	Ondersteunende diensten	-,07332	,02908	,072	-,1503	,0037
Commerciële buitendienst;	Stafmedewerkers	,07872	,06908	1,000	-,1043	,2617
	Commerciële binnendienst;	,12489	,06743	,388	-,0537	,3035
	Ondersteunende diensten	,05157	,06862	1,000	-,1302	,2333
Ondersteunende diensten;	Stafmedewerkers;	,02715	,03272	1,000	-,0595	,1138
	Commerciële binnendienst	,07332	,02908	,072	-,0037	,1503
	Commerciële buitendienst	-,05157	,06862	1,000	-,2333	,1302

### Multiple Comparisons

Dependent Variable: Vertrouwen in collega's

Bonferroni

(I) Binnen welk type valt jouw functie?	(J) Binnen welk type valt jouw functie?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Stafmedewerkers; bijvoorbeeld P&O, Financien & Risico e.d.	Commerciele binnendienst;	,13369	,05270	,069	-,0059	,2733
	Commerciele buitendienst;.	,07883	,12554	1,000	-,2537	,4114
	Ondersteunende diensten;	,00726	,05761	1,000	-,1453	,1599
Commerciele binnendienst; bijvoorbeeld administratie, call-center e.d.	Stafmedewerkers;	-,13369	,05270	,069	-,2733	,0059
	Commerciele buitendienst;.	-,05486	,12272	1,000	-,3799	,2702
	Ondersteunende diensten;	-,12643	,05117	,083	-,2620	,0091
Commerciele buitendienst; bijvoorbeeld accountmanagement e.d.	Stafmedewerkers;	-,07883	,12554	1,000	-,4114	,2537
	Commerciele binnendienst;	,05486	,12272	1,000	-,2702	,3799
	Ondersteunende diensten;	-,07157	,12490	1,000	-,4024	,2593
Ondersteunende diensten; bijvoorbeeld Functioneel Beheer, IT e.d.	Stafmedewerkers;	-,00726	,05761	1,000	-,1599	,1453
	Commerciele binnendienst;	,12643	,05117	,083	-,0091	,2620
	Commerciele buitendienst;	,07157	,12490	1,000	-,2593	,4024

### 8.17.1 Appendix 17: Regression analysis with independent variables per type of employee

#### ANOVA

Thuiswerken

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,201	3	,400	,956	,413
Within Groups	185,109	442	,419		
Total	186,311	445			

#### ANOVA

Virtueleteams

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,690	3	,230	,705	,550
Within Groups	71,699	220	,326		
Total	72,388	223			

#### ANOVA

Flexibiliteit

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29,792	3	9,931	19,408	,000
Within Groups	272,205	532	,512		
Total	301,996	535			

### 8.17.2 Appendix 17: Regression analysis with dependent variables per type of employee

#### ANOVA

Performance

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,815	3	,272	1,875	,133
Within Groups	74,611	515	,145		
Total	75,426	518			

### Multiple Comparisons

Dependent Variable: Flexibiliteit

Bonferroni

(I) Binnen welk type valt jouw functie?	(J) Binnen welk type valt jouw functie?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Stafmedewerkers; bijvoorbeeld P&O, Financien & Risico e.d.	Commerciele binnendienst;	,41764*	,07732	,000	,2129	,6224
	Commerciele buitendienst;	-,23831	,17933	1,000	-,7132	,2366
	Ondersteunende diensten;	-,07382	,08414	1,000	-,2966	,1490
Commerciele binnendienst; bijvoorbeeld administratie, call-center e.d.	Stafmedewerkers;	-,41764*	,07732	,000	-,6224	-,2129
	Commerciele buitendienst;	-,65595*	,17513	,001	-1,1197	-,1922
	Ondersteunende diensten;	-,49146*	,07476	,000	-,6894	-,2935
Commerciele buitendienst; bijvoorbeeld accountmanagement e.d.	Stafmedewerkers;	,23831	,17933	1,000	-,2366	,7132
	Commerciele binnendienst;	,65595*	,17513	,001	,1922	1,1197
	Ondersteunende diensten;	,16449	,17824	1,000	-,3075	,6365
Ondersteunende diensten; bijvoorbeeld Functioneel Beheer, IT e.d.	Stafmedewerkers;	,07382	,08414	1,000	-,1490	,2966
	Commerciele binnendienst;	,49146*	,07476	,000	,2935	,6894
	Commerciele buitendienst;	-,16449	,17824	1,000	-,6365	,3075

\*. The mean difference is significant at the 0.05 level.